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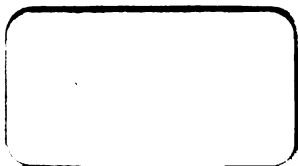
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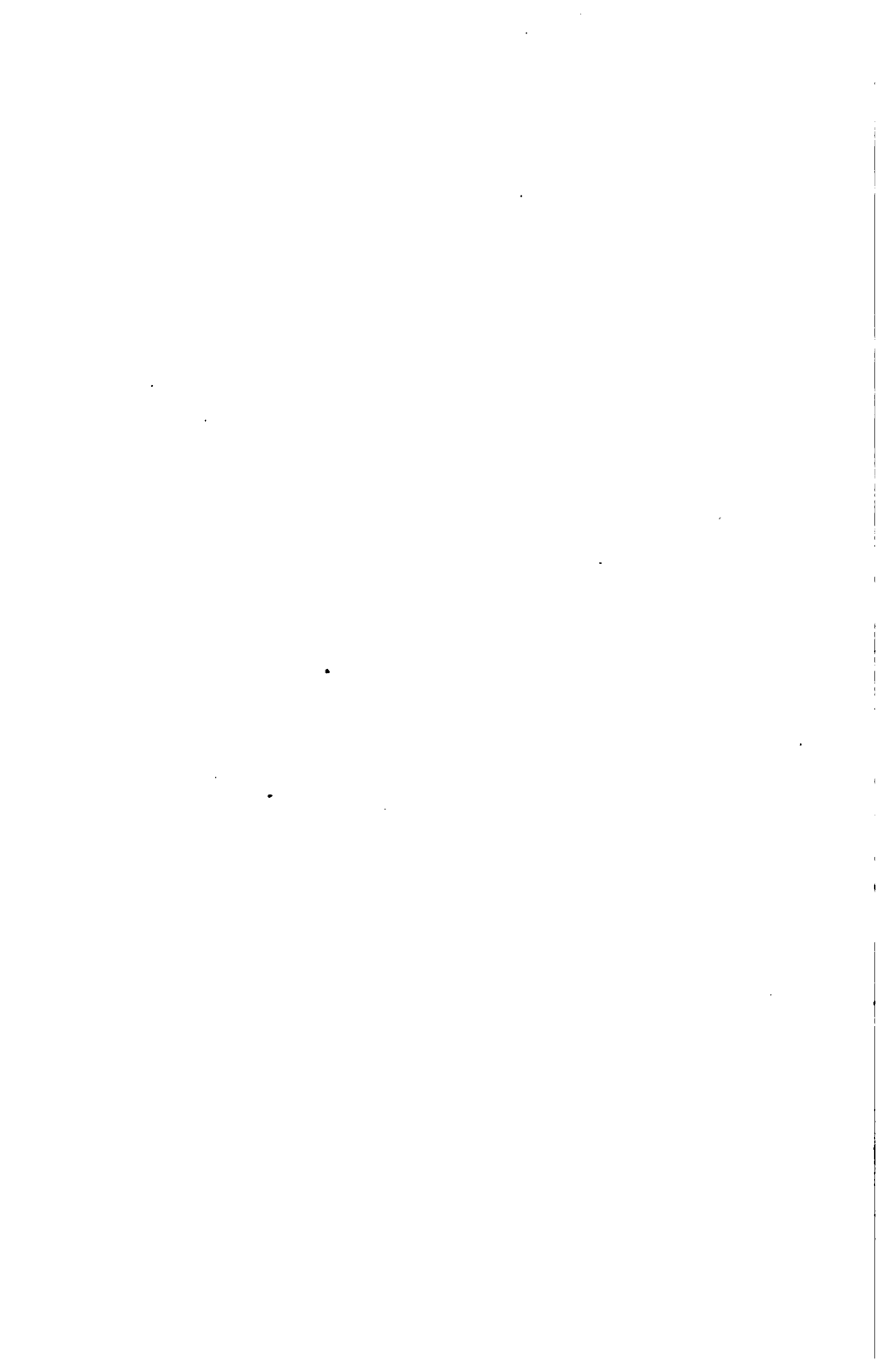
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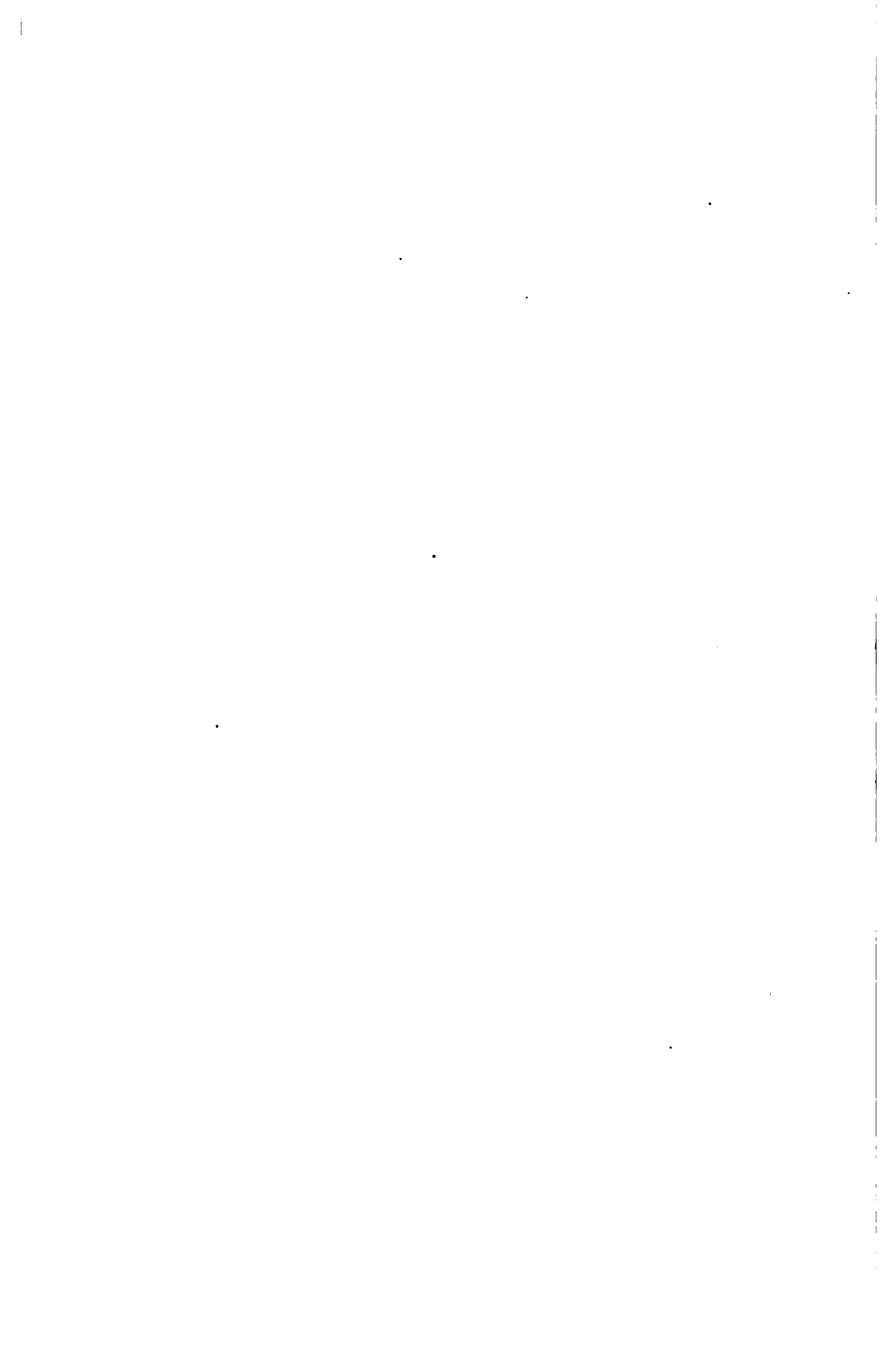
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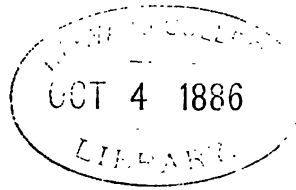


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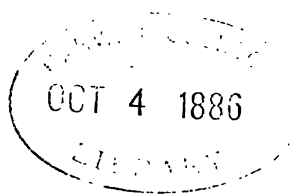
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HERMATHENA.

ON AUSONIUS.

THE following suggestions are the result of a re-perusal of Ausonius in the excellent edition of Schenkl (Berlin, 1883). It is much to be wished that this valuable work, which for the first time places our criticism of Ausonius on a firm basis, may lead to a new commentary, adequate to the exegetical requirements of our epoch, and the immense advance which archæological research has made since the time of Scaliger.

EPICEDION IN PATREM (319).

3. 4. *Vicinas urbes colui patriaque domoque
Vasates patria, sed lare Brudigalam.*

Compare with this what Statius, in his own *Epicedion in Patrem*, says of his father belonging to two natal cities, each of which claimed him as her foster-child, Velia and Naples (S. v. 3, 126 sqq.). See *Journal of Philol.*, xiii. p. 94.

PARENTALIA (162). v. 2 :—

*Culta mihi est pietas patre primum et matre uocalis
Dicere sel^a rea fit tertius Arborius.*

Schenkl conj. *Diceris (id re fit)*. Hartel, *Dicere sed res fert*. Logic and nature alike suggest preferably—

Diceris et re fis tertius Arborius.

PARENT. (168). xi. 9, 10:—

Nec licet obductum senio sopire dolorem.

Semper crudescit nam mihi poena recens.

I am astonished to find Schenkl retaining this against Mommsen's excellent conj. *paene recens*. Ausonius teems with quotations from earlier poetry, and it is almost impossible that he should not be imitating here Horace's well-known words, Epist. ii. 1, 53, 54: *Naeuius in manibus non est, et mentibus haeret Paene recens*.

PARENT. (176). xix. 11:—

cae quem, Maxime, fructum.

Ae Ae (Aī Aī), rather than *Eheu* (Scal.). In v. 16: *cape munera tristia parentum*, I suspect *tristia* is *trita*, 'familiar,' or possibly *prisca*, suggested by Catullus' *prisco quae more parentum Tradita sunt tristi munere ad inferias*, ci. 8.

PARENT. (179). xxii. 1, 2:—

Nec iam tu, matris spes unica, ephebe Talisi,

Consobrine meis, immemoratus eris.

Surely *meis*, the reading of Schenkl's best MS. *V*, is right, 'cousin to my children.' It is, to say the least, undesirable to *introduce* a licence, such as *meūs* before *immemoratus*, even in the case of a writer who, like Ausonius, is several times guilty of this offence against classical prosody. I have noted eight instances in which Ausonius has thus offended in the last syllable of the first half of the pentameter, *finīs solūs fuit Ausoniūs Alcinoūs magnanimūs talīs agit*. But in the case before us the best MS. preserves the right prosody, and as this gives a good sense, should, I think, be retained.

PROFESSORES (211). xxii. 10-12:—

Et tibi Latiis posthabite orsis

Vrbice Graiis celebris camoenis ἐλεγείω.

Schenkl conj. *Carmen Nunc* ξ λέγ' ᾗσω. But ᾗσω is not a very good form, and it seems possible that Ausonius wrote *carmen* ξ λεγιζω, i.e. ἐλεγιζω, with the first syllable twice repeated, in imitation of the supposed etymology of ἔλεγος, from ξ ξ.

xxii. 13 sqq. :—

*Nam tu Crispo coniuncte tuo
Prosa solebas et uersa loqui
Impete eodem
Priscos et heroas olim
Carminē Homeri commemoratos.
Fando referres.*

Schenkl writes *Priscos ut tres heroas olim*. I should prefer *Priscos rhetor ut h. o.*

xxii. 25-28 :—

*Ambo loqui faciles, ambo omnia carmina docti,
Callentes mython plasmata et historiam.
Liberi et ambo genus, sed quos meruisse deceret
Nasci ut cluerent patribus ingenuis.*

Nancisci Scal., an intolerable tautology; *Nascier* Poelman, *Sic nasci* Heinsius. Surely the sense is obviously, 'both born free, but so great in themselves as to deserve to be born, even though their fathers were not *ingenui*'; read therefore *ut non cluerent*.

xviii. MOSELLA. 236 :—

*Excipit ictum
Spiritus, ut fractis quondam per inane flagellis
Aura crepat.*

Schenkl alters *fractis* to *tractis*, I think wrongly. Does not *fractis* correspond exactly to our 'cracked,' applied to

the peculiar sound of a whip moved smartly in the air? Vergil's *fractos sonitus imitata tubarum*, Aen. iii. 356 *fractasque ad litora uoces*, where Servius gives as one of two explanations, *cum fragore uenientes*, Statius' *echo simul hinc et inde fractam*, S. iv. 3, 63, are, I imagine, only modifications of the same idea of a short, more or less *sharply isolated* and defined, sound.

316. *Spirat enim tecti testudine †corus achates.*

This must surely be *chloros achates*. The Orphic λιθικά which mention agates of many different colours (605, 6, ἐσθλὸν ἀχάτην. Πολλὰ μὲν οὖν ῥέα γ' ἐστὶν ἀχάτου χρώματ' ἰδέσθαι), thus describe the best kind, 611. *sqg.* :—

Ἄλλ' οἷος πάντων προφερέστατος εἶκε μιν εὐρης
εἶδος ἔχοντα δαφοινὸν ἀμαιμακέτοιο λέοντος.
τῷ καὶ μιν πρότεροισι λεοντοδέρην ὀνομῆναι
ἦνδανεν ἡμίθεοισι, κατὰστικτον σπιλάδεσσιν
πυρσῆσιν λευκάις τε μελαινομέναις χλοεραῖς τε.

It is true that Pliny does not mention, among the varieties of agates which he describes xxxvii. 139 *sqg.*, *iaspachates*, *cerachates*, *zmaragdachates*, *haemachates*, *leucachates*, *dendrachates*, *aethachates*, *coralloachates*, a *chlorachates*; but we may perhaps suppose this to be identical with his *zmaragdachates*, if by pale-green agate is meant one in which the colour was wholly or predominantly green; or, if the name was given to an agate with *spots* of green, according to the description of the λιθικά, this would be a reason why Pliny did not include it in a list of precisely defining names, such as those quoted above seem to be. At any rate, Pliny goes on to say that the Phrygian varieties had no green about them, as if this were a well-known and ordinary colour in agates.

LUDUS SEPTEM SAPIENTUM (300). *Prologus* 1-3 :—

*Septem sapientes, nomen quibus istud dedit
Superior aetas nec secula sustulit,
Hodieque in orchestram palliati prodeunt.*

The correction of Pithou, *Hodie in orchestram*, is bad metrically, and improbable palæographically. I should prefer *Hodieque orchestra*. I can recall no instance of *hodie* appearing in MSS. as *hodieque*, or as *P* gives here with even more clearness, *hodie queque*. We may feel certain that *-que* is an integral part of the MS. tradition, and to be retained at any cost.

SOLON, 33 *sqq.* 106 :—

*Bellum ille in Persas parat.
Profectus uictus uinctus regi deditus.
At ille captans funeris instar sui
Qua flamma totum se per ambitum dabat
Voluens in altum fumidos aestu globos
Ac paene sero Croesus ingenti sono
O uere uates, inquit, o Solon Solon.*

V. 108 is written as above in *V*. Scaliger emended

At ilico aptant funeis, instant arsui;

Schenkl,

At ilico aptant funeris ipsum instar sui;

neither of which looks at all likely. The only word in *V* which is suspicious is *instar*. It occurs in other equally dubious positions, e.g. Cat. cxv. 1, *Mentula habet instar triginta millia prati*. There is among the unusual words explained in the Phillipps Glossary a noun, *bostar*, *boum statio*, *boum passus* (i. *pastus*). And in a metrical treatise distinguishing the meanings of words spelt similarly, but

inflected differently, which I have found in Harl. 4967, I noted the following verses :—

*Bostar eris proprium nomen, stabulum quoque bostri (l. bostar)
Bostaris facit hic genitiuo, Bostaris ille,
In bostare boues Bostaris esse solent.*

Catullus then may have written *Mentula habet bostar*, perhaps utilizing this odd and seemingly rustic word to recall the Callimachean (Cat. cxvi. 2) βοόστρασις (Del. 102). But whether this be so or not, the equally rare *bustar*, which Charisius instances with *exemplar, iubar, instar, exstar, lucar, lacunar* among *neutralia* (i. 14, p. 38, Keil), and explains to mean *locus ubi cremantur mortuorum corpora*, would seem to have been undoubtedly the word used by Ausonius, and corrupted in the MSS. to *instar*. The lexicons quote no instance of this rare word, but it more than suits the passage—

At ille captans funeris bustar sui,

already clutching (in his agony) the burning funeral pile, and all but too late to be saved.

Ib. 45 :—

*Croesus ad regem ilico
Per †ministorum ducitur lectam manum.*

Perhaps *Per seruitiorum*.

LUDUS SEPT. SAPIENT. (307). PITTACUS 12 :—

Tempus me abire ne sim molestus. Plaudite.

Omit *sim*, as the old editions.

PERIANDER (308). 13, 14 :—

*Nil est quod ampliozem curam postulet,
Quam cogitare quid gerendum sit dehinc
Incogitantes fors non consilium regit.*

Schenkl, with the earlier editions, punctuates after *gerendum sit*, beginning a new sentence with *dehinc*. The meaning, however, is obviously 'nothing calls for greater care than to reflect what is to be done *afterwards*.' A wise man will think over the *future* possibilities of his action, calculate what is to be done, if the first step comes off.

CAESARES (256):—

To the numerous MSS. which contain these verses on the Caesars may be added Digby 53, fol. 51^a. Schenkl has given so exhaustive an apparatus of readings that I need only mention such variants as are unnoticed by him, and may therefore be peculiar to Digby 53. In the interest of scholars, I may perhaps observe, that of this fine collection of MSS. a catalogue has been recently (1883) edited at the Clarendon Press by Mr. Macray.

MONOSTICHA (257). 1, 2:—

Primus regalem patefecit Iulius aulam
Caesar et Augusto nomen transcripsit et arcem.

Digb. *artem*. May not this be right? At any rate, *arcem* seems very obscure. Is it the Capitol? Then it would hardly be true. Or the stronghold of Empire? Then Rome alone could be meant. But so understood, the word seems rather heavily weighted. Reading *artem*, 'policy,' 'secret of government,' we get a perfectly clear sense, and one which, in reference to Augustus, is emphatically true.

CAESARES (259). 12:—

Sera grauem perimunt, set iusta, piacula fratrem.

Digb. *pericula*, wrongly, as Domitian's death was the expiation of a long reign of crimes. The variant, how-

ever, is noticeable, and explains, I think, a difficult passage of the *Metamorphoses*, xv. 153-155:—

*O genus attonitum gelidae formidine mortis !
Quid Styga, quid tenebras, et nomina uana timetis
Materiem uatum, falsique pericula mundi ?*

These words are spoken by Pythagoras. Why should men, whose lives do not end with their existence on earth, but are continued in another form after death (*omnia mutantur, nihil interit*, 163), be afraid of Styx, Erebus, and the other fabulous monstrosities (*piacula*) of an unreal world? *Piacula* is mentioned by Heinsius as found in two MSS. of *Met.* xv. 155. Digb. proves that the interchange of the two words *periculum*, *piaculum*, was a recurring one. The sense of *piacula* in *Met.* xv. 155 seems to be something requiring expiation, as monstrous or portentous; or it might mean 'the sin-atonements of a *deluded* world.'

OCTAVIUS AUGUSTUS (262):—

*Longaeva et numquam dubiis uiolata potestas
In terris positum credidit esse deum.*

So MSS. L. Müller conj. *reddidit*, thereby introducing a construction by no means of the choicest. I think *credidit* is right—'long-continued and never-imperilled power believed (*i.e.* brought itself to believe) that a man living on the earth was a god.'

DE RATIONE LIBRAE (368). 20-22:—

*Nec dextans retinet nomen sextante remoto
Et dodrans quadrante sal's auctore carebit
Diuiulsusque triens prohibet persistere bessem.*

As $\frac{5}{8}$ implies $\frac{1}{8}$, so $\frac{3}{4}$ has no meaning without $\frac{1}{4}$, or $\frac{3}{4}$ without $\frac{1}{4}$. Possibly, therefore,

Et dodrans quadrante secus ductore carebit,

' $\frac{3}{4}$ apart from $\frac{1}{4}$ will have no guiding number.'

EPISTULAE. II. *Pater ad Filium* (391):—

*Solus ego et quamvis coetu celebratus amico
Solus eram.*

Readers of Propertius will recall the well-known passage in which the poet, surrounded by courtezans, but absorbed in the thought of Cynthia, says (v. 8, 47, 8):—

*Cantabant surdo, nudabant pectora caeco.
Lanuuii ad portas ei mihi solus eram.*

DE AETATIBUS ANIMANTIUM (365):—

The first ten verses of this poem I collated in a MS. in the Barberini Library in Rome. They are at the end of the *Heroides*, in a volume containing also the *Amores* and *de Ponto*. In v. 7 it has *uos* and *peruertitis*; in 9 *fines*.

EPISTULAE (394). v. 17, 18:—

*An quia per tabulam medica pugna notatam
Debita summa mihi est, ne repetamus, abes?*

Perhaps *medico signante*.

xl. (400):—

*Denique †pissonem, quem †tollo in existimo proprie
a philologis appellatum, †adcreui, ut iubebas, recenti
uersuum tuorum lectione non ausus, ea, quae tibi
iam fuerant cursim recitata, transmissi.*

Ausonius seems to be speaking of the appended *bilingual* (xii. 2) Epistula xii., in which Latin and Greek words are mixed. Possibly, therefore, *Diglosson* (or *Disomon*) *quem Kollomenon* (κολλόμενον) *existimo proprie a philologis appellatum*. Schenkl has already suggested κεκολλημένον. Dezeimeris' suggestion *χωλόνομον* halts on its latter half, for what could it mean? and no instance is quoted in the

lexicons. For *adcreui*, which Schenkl changes to *addere*, Dezeimeris¹ conjectures *admouere*, with no great probability. Yet his discussion of this and other passages of Ausonius is interesting, and well worth reading from many points of view.

EPISTULA xii. (401):—

The labours of Scaliger, Schenkl, and Wilamowitz (*Hermes*, xix. pp. 461–3) have cleared up most of the doubtful points in this curious mixo-Græco-Roman poem. Ausonius has aimed at producing a comic effect, not only by intermingling Greek with Latin words, in the style of Lucilius, but by affixing to Latin words Greek inflexions, and Latin inflexions to Greek words. The well-known *Trumpeter unus erat qui coatum scarlet habebat* forms a close and amusing parallel in our own language. In one passage I find I had made the same conjecture as Wilamowitz, v. 31, τρομερή δὲ πάρεστι for τρομερη λεπα pecti, and this may be safely pronounced certain. Wilamowitz is also indubitably right in restoring focov (or possibly *focis*), in v. 9, for Φokiy; πεμφώμεθ' for ΠΕΜψωμεΟ of M (the Magliabecchian codex). But I cannot agree with him altogether in his restitution of vv. 14, 15, in which Ausonius invokes the Muses, Μνημοσύνης κρηδεμνοκόμου πολυcantica τέκνα; then follow the verses in question, which are thus written in M:—

Ennea uerbosae PINNOCTεΦαNOIτε puellae
λεατεμου πολυrisae επyc κουρωδεα μολπηη

Schenkl writes κριννοστέφανοί τε, which I do not understand; Wilamowitz *ρίηνοστέφανοί τε*, which he explains by

¹ As M. Dezeimeris' work is little known, I add the title of it here: *texte de divers auteurs par Reinhold Dezeimeris. Bordeaux: V^e. Paul Leçons nouvelles et remarques sur le Chaumas, 1875.*

v. 16, *Frontibus ūmetérais πτέρινον praeferite triumphum*, i. e. I suppose 'feather-crowned,' = wearing feathers on your foreheads as tokens of victory. My own conjecture assumes that the poet is here, as throughout, speaking in a jocular and half-disparaging way: 'Come ye wordy maidens of the faded crowns,' i. e. *ρίκνοστέφανοί τε*. In v. 15 Wilamowitz is probably right in restoring **Ελθατέ μοι*, but the rest of his reconstitution I cannot accept. He reads *πολurisae ἐπὶ scurrῶδεα μολπήν*. But *κουρώδεα*, 'childish,' aptly expresses the doggrel character of this poem, and I follow Schenkl in retaining it, reading, however, for *επυς*, not *ἐπη*, but *ἐπη* 'ς (*ἐς*). As for *πολurisae*, it is perhaps *πολύριζά τ'*. The whole verse will now run thus:—

**Ελθατέ μοι πολύριζά τ' ἐπη* 'ς *κουρώδεα μολπήν*,

'Come, and many-rooted words with you, to my infantine song.'

V. 17 is thus given in M:—

YMaTapkaMεωCaICOCTIXOHyεOTiOHTHC,

of which *Υμᾶς γὰρ καλέω*, as several other MSS. give, is certain. For the rest of the line Schenkl conjectures *καινός Διονυσοποιητής*; Wilamowitz *salsoστιχονυγοποιητής*. But, to begin with the end, the letter following Hy is given in the MSS. consistently as *ε* or *σ*, which makes Schenkl's view, that it was *νυσο*, to my mind nearly certain. But not *Διονυσο*-, of which there is absolutely no trace; but, as Wil. and the MSS., *στιχονυσο*. What then is to be made of the remaining CaICO? I imagine it to be not *καινο*-, nor *salso*-, but *σκαιο*-, the whole becoming *σκαιοστιχονυσοποιητής*, 'a Nysa-poet of silly verses,' or as, according to the scholiast on Aristides, p. 313, ed. Dind., *νύσας ἐκάλουν τὰ δένδρα*, 'a clumsy-verse-vine-poet.' If I am right in this view, Ausonius has here written, no doubt designedly, two complete verses of Greek, i. e. with no admixture of Latin words. In v. 26 I much prefer to retain, with Schenkl, the

-o of the verb *συμμέμφετο*, against *συμμέμφεται* of Wilamowitz; but I am not convinced that either of these versions is right; for though M and another MS. give *ΜεΝφεοτ*, the others omit the τ.

30-34 :—

Ἄλλ' ἤδη κείνος μὲν ἅπας *iunualios* ἰδρὼς
ἐκκέχυται μελέων, τρομερὴ δὲ πάρεστι *senectus*,
καὶ *minus in sumptum* δαπάνας *leuis arca ministrat*
οὐτ' ἄρ' ἔχει ἀπάλαμνος ἀνὴρ *κουαιστώδεα lucron*
κλεινικὸς οὔτε γέρων *apyCOHkepalzetεΜοιN*.

So M, for which Schenkl conjectures *ἄρ' ἴσον κεραϊζόμενος* νοῦν. Wilam. *χρύσειον κερδίζεται μισθόν*.

That *χρυσόν*, or *χρύσειον*, is what Ausonius wrote seems very clear; but I am not inclined to introduce another short -αι without the strongest evidence, and here there is no evidence whatever. One of Schenkl's inferior MSS. gives *apyCeoNkepaazetεNoiX*. Possibly then *χρύσειον κέρας* ἄξετ' ἐν οἴκῳ, or *χρυσόν κ' ἐργάζετ' ἐν οἴκῳ*, *i. e.* ἐργάζηται, an Homericism which might perhaps be admitted in so grotesque a performance. In v. 38 the MSS. point, I think, to *σὺν φιάλῃ que οἰνώ que*, rather than Schenkl's *σὺν φιάλῃ uino-que*; but I see no reason for Wilamowitz's *aequaetuoque*.

EPISTULAE xv. (404) :—

*Non tigris te, non leonis impetu,
Amore sed caro expelo.*

Schenkl *Non ut tigris te*. Better *Non tigris ut te* (Hor. C. i, 23, 9).

EPISTULAE xvi. 2 (406). 10-12 :—

*Hunc dico, qui lingua potens
Minorem Atridam praeterit
Orando pauca et musica.*

παῦρα μὲν ἀλλὰ μάλα λιγέως (*Il.* iii. 214). Read, therefore, *pauca at musica*.

84 *Probiano atque Anicio.*

I suspect Ausonius wrote *Probiano*, just as Avianus, Avianus are both found.

EPISTULAE xviii. (408). 19-24 :—

*Quot telios primus numerus solusque probatur,
Quot par atque impar partibus aequiperat
Bis ternos et ter binos qui conserit unus,
Qui solus totidem congemminatus habet
Quot faciunt iuncti subterque supraque locati
Qui numerant Hyadas Pleiadasque simul.*

As many as are the parts which prove the first and only perfect number 6 (Macrob. S. vii. 13, 10: *senarium numerum qui omnifariam plenus perfectus atque diuinus est*), as many as are the parts by which that number which in its single self unites 3×2 and 2×3 makes odd and even equal ($2 + 2 + 2 = 3 + 2 + 1$), that number which alone, if doubled, contains as many units as the numbers before and after it (5 and 7) added together, which numbers express the amount of stars in the Pleiades and Hyades united.

It is perhaps more natural to explain *Quot par atque impar partibus aequiperat* of the number six being represented indifferently by three twos or two threes.

EPISTULA xxii. (415). 9, 10 :—

*Canus comosus hispidus trux † atribux
Terentianus Phormio.*

I have not been able to find *atribux* in any glossary. Yet it looks genuine, an abbreviated *atribuccius*, 'black-cheeked,' 'dark-jowled.' Cf. *duribuccius*, Gloss. Bodl. Auct. T. 11. 24: *barba stereli duri buctius* (l. *duribuccius*); Petronius's *durae buccae*, c. 43.

27, 28:—

Et nunc parauit triticum casco sale
Nousque pollet emporus.

Schenkl rejects this excellent reading of all MSS. for Bentley's comparatively ineffective *uesco*. But *casco* is not only highly sarcastic, but forms a designed antithesis to *nous*.

46 *Triptolemon olim siue †medem quem uocant*
Aut Tullianum Buzygem.

Andreas Schott conj. *siue Epimenidem*. Wrongly, I think. The Venetian scholiast on *Il.* xviii. 483 says: καὶ ἄποτρον δὲ πρῶτον ἐκεῖ Μαλνίδος ὁ καὶ Βουζύγης ἔζηξε. I would read, therefore, *siue Maenidem uocant*, as the *e* looks right, and another form so inflected might well have existed side by side with the form in -ος.

EPISTULA xxiv. (418).

This epistle is full of Catullianisms—14, *loquitur tremulum coma pinea*; 21, *tentis reboant caua tympana tergis*; 48, *Nec possum reticere*. It contains a noticeable rarity, *reliidunt*, 43—

Breuius nihil est nec plenius istis
Quae firmata probant aut infirmata reliidunt.

The nearest emendation would be *relincunt*.

EPIGRAMMATA lxxi. (75).

Schenkl gives no indication of this epigram being a condensed paraphrase of Babrius, 75. As an extraordinary contrast with Avianus, it has its interest; but the advantage in finish and neatness is greatly on the side of Avianus, if we may judge from his 42 specimens against this one of Ausonius.

Append. xxiv. (139).

Speaking of Eteocles and Polynices, Ausonius says :—

*Namque etiam ex uno dum surgunt aggere flammae
In diversa sui dissiliunt cineres.*

The Greek from which this is translated (Anth. Pal. vii. 396, 4, 5) is—

κείνων χά τάφος ἀντίπαλος
καὶ πυρὶ πῦρ ἤλεγξαν ἐναντίον.

For ἤλεγξαν I conjecture εἰλιξαν.

I add a few remarks on the *Itinerarium* of Rutilius Namatianus.

i. 24 :—

Priuatam repetunt publica damna fidem.

The expression *publica damna* is rare, and is found in the *Ibis*, 220, and the *Epicedion Drusi*, 200.

ii. 57, 58 :—

*Omnia Tartarei cessent tormenta Neronis.
Consumat Stygias tristior umbra faces.
Hic immortalem, mortalem perculit ille,
Hic mundi matrem perculit, ille suam.*

Surely *consummat*. Stilicho sums up in his single person all the punishments of the Furies. Another reminiscence of the *Ibis*, 189, 190 :—

*In te transcribet ueterum tormenta uirorum
Manibus antiquis causa quietis eris.*

i. 101, 2 :—

*Intercepta tuis conduntur flumina muris,
Consumunt totos celsa lauacra lacus.*

Rather *Intersaepta suis*. He is speaking of aqueducts. 'Rivers are closed about, and hidden in walls of their own.'

Reading through Macrobius' *Saturnalia* this summer, in a northern town, where every street is named from some jewel (Saltburn-on-the-Sea), I came upon that curious passage in which Augustus addresses Maecenas in a number of high-flown phrases borrowed from the jeweller's shop. S. II. 4. 12: *Vale mel gentium meculle, ebur ex Etruria, lasar Arretinum, adamas supernas, Tiberinum margaritum, Cilniorum smaragde, iaspi figulorum, berylle Porsenae, carbunculum †habeas*, ἵνα συντέμω πάντα, μάλαγμα moecharum. Mr. C. W. King, *Antique Gems*, p. 320, translates: 'Farewell my ivory statuette from Etruria, my Aretine spice, my diamond of the Upper Country, my pearl of the Tiber, my emerald of the Cilnian clan, my jasper of the Potteries, my beryl of King Porsena, my ruby of Arabia,' reading *carbuncule Arabice*. Ian, in his critical note on the passage, has no idea of Arabia. Accepting from Mr. King the fact, I think it, notwithstanding, possible that *carbunculum* may be right, a neuter form similar to *margaritum*, having been purposely substituted for the ordinary *carbunculus*. If this is so, *habeas* will become *Arabiae*. In any case, readers will be grateful to me for calling their attention to so clever an emendation by so eminent a connoisseur.

Macrobius S. vii. 1, 14: *Nonne si quis aut inter Phaeacas aut apud Poenos sermones de sapientia erutos conuiuialibus fabulis miscuisset, et gratiam illis coetibus aptam perderet, et in se risum plane iustum moueret?*

I cannot help thinking *sermones de sapientia erutos* an obscure and improbable expression, however interpreted. We should read, I imagine, *eruditos*. Cf. § 13: *ea cena quam Callias doctissimis dedit*.

ADDENDUM.

It seems worth while to mention here the corrections of Ausonius' text which the admirable Renaissance scholar, Constantius of Fano (see the Preface to my *Ibis*, p. vi.), has introduced in his *Hecatoestys*, printed 1507, c. xiii.:—

'In rescripto ad paulum hæc uerba leguntur. Dissonum quoque quem tolle nomen existimo proprie a philologis appellatum: accreui in quibus hæc duæ uoces tolle nomen tollendæ et abradendæ sunt: ac pro iis tholumenon .i. *θολούμενον* quod turbidum proprio significato significat: reponendum. nam *θολοῦμαι* est turbari. Quam scripturam in manu scripto codice mediæ uetustatis obseruauimus. Vti & in epistola quadam ad paulinum: cuius initium est. Quanto me affecit beneficio: in his uerbis. Isti tamen (ita te et hesperium saluos habeam) quod spacium unius lucubrationculæ effudi. isthi idest *ισσθι* (*l. ισθι*) hoc est scias & effudi non effusi esse scribendum. Item in dimetro iambico ad probum ubi legitur.

Cui uigiles luminum.

Vacare dignabunt choreæ. nigellæ coræ esse castigandum. Significat .n. (*h. e.* enim) cora idest *κορη* ut pollucis utar uerbis *ὀφθαλμων το εν μεσω μελαν.* idest oculorum in medio nigrum: hoc est oculorum aciem: quæ et pupilla uocatur sicuti tullius scribit in secundo de deorum natura licet puellam uirginem deamque proserpinam sæpe numero notet: ut plena sunt græcorum scriptorum uolumina. Et in epistola: quæ nuptiali centoni præponitur: ubi impressum cernitur. Nec afranius nauci daret: nec sticum suum plautus offerret: idem manu scriptus codex cicum non sticum consulit esse legendum. Est .n. cicum membrana tenuis: qua malum punicum interius discriminatur autoribus festo & uarrone ponitur quod (*l. que*) pro re uilissima et neglectui habita: ut nauci. Quod nonnulli membranulam esse aiunt: quæ in nucis iuglandis est medio alii cuiuscumque rei putamen: ut aliam (*l. alia*) prudens omittam quæ festus idem pompeius enarrat.

Schenkl admits two of these corrections into his text, *coræ* and *cicum*, in the former case mentioning Constan-

tius by name, but not in the latter, probably because *ciccum* is the reading of most MSS. But neither *θολούμενον* nor *ἴσθι* appears in his apparatus criticus, which I signalize as a debt due to Constantius, one of the very best scholars of the period which produced Poliziano. Indeed I incline to believe that *ἴσθι* is right. The passage is given by Schenkl as follows:—

Interea tamen, ne sine corollario poetico tabellarius tuus rediret, paucis iambicis præludendum putaui, dum illud, quod a me heroico metro desideras incohatur. isti tamen, ita te et Hesperium saluos habeam, quod spatio lucubrationum unius effusi, quamquam hoc ipsi de se probabunt, tamen nihil diligentiae ulterioris habuerunt.

Gronovius proposed to omit *quod* before *spatio*. If, with Constantius, we change *isti* to *ἴσθι*, the construction becomes unembarrassed and clear, retaining, of course, the MS. reading *effusi*.

Constantius (*Hec.* 80, 81) was also the first to restore to Ciris 165, *gelidis Edonum* for *gelidi Sydonum*; 169, *Sicyonia* for *sic omnia*. In Bährens' appar. crit. the former of these long-since accepted emendations is ascribed to Scaliger, the latter to Leopardus—the one considerably, the other slightly, later than Constantius in point of time.

ROBINSON ELLIS.

DR. JOWETT'S *POLITICS* OF ARISTOTLE.

IN all Dr. Jowett's works the classical scholar and student must find much to welcome and to admire. His breadth of view and of culture, his independence and modernness (so to speak) of mind, coupled with his charm of style, cannot fail to shed light on what was dark before, and to add clearness where there was light. Of his essays, we may say in the words of the noble tribute of Aristotle to his great rival, 'they always exhibit grace and originality and thought'; and the same is true of his translations. But, perhaps, what we ask for in a translator of Aristotle is not so much these qualities as a vigorous attempt to present a consecutive train of thought, to put in the reader's hand a clue to guide him along the high road of the main argument, and to prevent him from straying down one of those thousand by-paths that lead away from the track.

Such is the end which Susemihl always keeps before his eyes, and such is the aim of Mr. Welldon, though he will not follow Susemihl in some of his more daring corrections and transpositions. It is by transposition chiefly that Susemihl proposes to give logical coherency to the *Politics*. We shall afterwards inquire how far this course seems justified. Meantime, be it observed, that it is from no mere conservative bias that Dr. Jowett rejects the method of Susemihl, but by reason of the view which he has formed of the nature of the *Politics* and the state in which the treatise has come down to us. He tell us¹ that

¹ Pref. v., vi.

he has been 'led to the conclusion that the *Politics* of Aristotle exist only in a very imperfect and questionable shape. . . . We cannot rehabilitate them by a transposition of sentences, or by a change in the order of the books; we must take them as they are.' He takes them as they are in Bekker's first edition of 1832, which he very seldom deserts, recording occasionally in the Notes a view of Susemihl or Bernays, but almost invariably dismissing them as 'unsupported by MS authority and unnecessary.' So much, at least, may be gathered from the volumes which he has now given us. We cannot speak with certainty as to his views about the criticism of Aristotle until he gives us part ii. of volume II., which will contain, among nine essays, one on the text of the *Politics*. To these essays we look forward with the greatest interest, and anticipate that in the hands of the prince of essayists they will form the most valuable part of a valuable work. However one may estimate his dealings with the text or the interpretation of it, the present instalment—namely volume I. and part i. of volume II., which in the Introduction and Notes abound in acute and suggestive references to modern politics and history—inspires an expectation, which we are sure the conclusion of volume II. will confirm, that Dr. Jowett's work, when complete, will lift the whole study of Aristotle to a higher level, and shed on his speculations, in full measure, that light which comes from cultured modern experience and observation.

Dr. Jowett makes hardly any use of the resources of printing to elucidate the meaning of the text. We very rarely have a missing premiss supplied in italics, or a piece of surplusage enclosed within brackets. The followers of Susemihl, on the contrary, represented among English scholars by Mr. Welldon, whose translation of the *Politics* is such a vast improvement on the work of his predeces-

sors, largely use these expedients for disentangling the ravelled skein of the argument.

Apart from the issue between the schools of Dr. Jowett and of Dr. Susemihl, it has always seemed to me that the translators of all Greek prose writers, especially of Thucydides and Aristotle, might avail themselves far more than they do of modern typographical devices. The Greek system of particles does duty for some of these. How often do we find that a $\gamma\epsilon$ is best rendered by italicising a word in a written translation or emphasising it *viva voce*. Half the newspapers are now describing a certain party as the 'Nationalists.' All that the inverted commas mean a Greek could have conveyed by $\delta\grave{\eta}$ or $\delta\grave{\eta}\theta\epsilon\nu$. There is much reason to regret that the Greeks never thought of the simple expedient whereby we put in a footnote a remark which bears on the main argument but interrupts its course. Sometimes such a note in a Greek writer runs to a very considerable length, and would in a modern work perhaps be made to form an Appendix. For instance, in Thuc. VII. 27, quite near the beginning of the chapter, the historian tells us how 1300 targeteers, who were to have sailed with Demosthenes to Sicily, came too late, and were sent back to their own country, because each soldier was receiving a drachma a-day, 'and to employ them against Decelea would have been too expensive ($\pi\omicron\lambda\upsilon\tau\epsilon\lambda\acute{\epsilon}\varsigma$).' To explain this, the rest of this chapter and the whole of the next, both long chapters, go to show what great expenditure was now forced on Athens, and how little she was able to meet it; in fact, they are a long note on $\pi\omicron\lambda\upsilon\tau\epsilon\lambda\acute{\epsilon}\varsigma$, and the course of the narrative is resumed in ch. 29 by the words, 'so they at once sent home the Thracians, who came too late to serve under Demosthenes, being in great want of money and not wishing to incur expense.' Applying the same principle to Aristotle, we find that a very difficult passage which confronts us on the very threshold of

the work becomes easy. If the translator would use the bottom of each page for those clauses which the Greek writer himself would presumably have put in a footnote, a great source of perplexity would be removed. For instance, one might translate the first chapter, regarding as a note ὑσοι μὲν οὖν οἴονται down to ταῦτα δ' οὐκ ἔστιν ἀληθῆ, thus :—

Every State is an association of some kind, and every association aims at some good (some presumed good being the end of all action). Accordingly, it is clear that as all associations aim at some good, the State, which is the highest association and embraces all the rest, aims at the highest good in the highest degree.* My meaning will be clear if we follow the method which has hitherto guided us. As, in other cases, we must analyse the compound whole into its uncompounded elements (its least parts), so here we must examine the elements of which the State is composed, and in doing so we shall incidentally see the points of difference between these very component elements, and whether we can reach any scientific conclusion in regard to each of them.

* It is a mistake to regard the rule of the magistrate, the king, the householder, and the slave-master, as identical in kind, and differing only in the number of the subjects ruled. This mistaken theory lays down that the ruler, if he has but few subjects, is denominated slave-master ; if a larger number, householder ; if still a larger number, magistrate or king. The only distinction it would make between a magistrate and a king is, that the ruler is a king if he never resigns his power ; but a magistrate, when on the basis of such (magisterial) functions he alternately resigns and resumes his authority. Now all this is a misconception.

Thus presented, the train of thought seems clear enough : τὸ λεγόμενον is the statement that the State, being the highest association, aims at the highest good : περὶ τούτων refers to ἐξ ὧν σύγκειται. If either of these expressions is supposed to refer to the words which I have printed as a footnote, insuperable difficulties arise. If περὶ τούτων means ' the different kinds of rule ' commented on in the footnote, then we

must assume that Aristotle puts off till the end of Bk. III. a discussion which he promises us at once, and here substitutes for it a discussion on the component elements of the State, which I hold to be the subject referred to in the words *περὶ τούτων*. I must add, that for *αὐτὸς ἐφεισθήκη* I read *αὐτὸς ἐφεισθήκη* (for the expression, cp. Eur. *Tro.* 1206, *οὐδεὶς αὐτὸς ἐντυχεῖ ποτὶ* 'no one is ever *uninterruptedly* blest'), the distinction being between the perpetual rule of the king and the interrupted rule of the magistrate, who on the expiry of his term of office must yield to his successor. The words *κατὰ λόγους, κ.τ.λ.*, distinguish the magistrate from the slave-master, who is *not* designated as such by virtue of any faculty, but solely by the relation in which he stands to the slave; see I. 7. 2. My theory is, that Aristotle wrote a passage which never could have given rise to any difficulty if he had been acquainted with the use of the footnote, and that the best way to present such a passage to an English reader would be to use the footnote, and not to enclose the passage within brackets, which disfigure the text, and seem to charge Aristotle with a violation of logical order.

As to the fundamental question whether we are justified in applying transposition, I mean bold transposition of sentences not juxtaposed, in order to obtain logical coherency, it seems to me that if only in one case such a method seems plainly indicated, then it may be used largely; for the principle is admitted that the work has come to us in a state of confusion of which we cannot suppose Aristotle to have been the source. As regards the justifiability of emendation, surely the MSS of Aristotle cannot be supposed to carry with them a greater authority than those in which the works of other Greek writers have come down to us. I here present to the reader a passage in Bk. I. 13. 7. 8, which, as given in Bekker and Congreve, and translated by Dr. Jowett, seems a *farrago* of

confusion;² but, as presented by Susemihl,³ is perfectly coherent.

BEKKER.

ἄλλον γὰρ τρόπον τὸ ἐλεύθερον τοῦ δούλου ἄρχει καὶ τὸ ἄρρεν τοῦ θήλεος καὶ ἀνὴρ παιδός· καὶ πᾶσιν ἐνυπάρχει μὲν τὰ μόρια τῆς ψυχῆς, ἀλλ' ἐνυπάρχει διαφερόντως. ὁ μὲν γὰρ δοῦλος ὅλως οὐκ ἔχει τὸ βουλευτικόν, τὸ δὲ θῆλυ ἔχει μὲν, ἀλλ' ἄκυρον· ὁ δὲ παῖς ἔχει μὲν, ἀλλ' ἀτελές, ὁμοίως τοίνυν ἀναγκαῖον ἔχειν καὶ περὶ τὰς ἠθικὰς ἀρετάς· ὑποληπτέον δεῖν μὲν μετέχειν πάντας, ἀλλ' οὐ τὸν αὐτὸν τρόπον, ἀλλ' ὅσον ἐκάστω πρὸς τὸ αὐτοῦ ἔργον. διὸ τὸν μὲν ἄρχοντα τελέαν ἔχειν δεῖ τὴν ἠθικὴν ἀρετήν (τὸ γὰρ ἔργον ἐστὶν ἀπλῶς τοῦ ἀρχιτέκτονος, ὁ δὲ λόγος ἀρχιτέκτων), τῶν δ' ἄλλων ἑκαστον, ὅσον ἐπιβάλλει αὐτοῖς. ὥστε φανερόν ἐστιν ἠθικὴν ἀρετὴν τῶν εἰρημένων πάντων, καὶ οὐχ ἡ αὐτὴ σωφροσύνη γυναικὸς καὶ ἀνδρός, οὐδ' ἀνδρία καὶ δικαιοσύνη, καθάπερ ᾤετο Σωκράτης, ἀλλ' ἡ μὲν ἀρχικὴ ἀνδρία, ἡ δ' ὑπηρετικὴ. ὁμοίως δ' ἔχει καὶ περὶ τὰς ἄλλας.

SUSEMIHL.

ἄλλον γὰρ τρόπον τὸ ἐλεύθερον τοῦ δούλου ἄρχει καὶ τὸ ἄρρεν τοῦ θήλεος καὶ ἀνὴρ παιδός. καὶ πᾶσιν ἐνυπάρχει μὲν τὰ μόρια τῆς ψυχῆς, ἀλλ' ἐνυπάρχει διαφερόντως. ὁ μὲν γὰρ δοῦλος ὅλως οὐκ ἔχει τὸ βουλευτικόν, τὸ δὲ θῆλυ ἔχει μὲν, ἀλλ' ἄκυρον, ὁ δὲ παῖς ἔχει μὲν, ἀλλ' ἀτελές. διὸ τὸν μὲν ἄρχοντα τελέαν ἔχειν δεῖ τὴν διανοητικὴν ἀρετήν (τὸ γὰρ ἔργον ἐστὶν ἀπλῶς τοῦ ἀρχιτέκτονος, ὁ δὲ λόγος ἀρχιτέκτων), τῶν δ' ἄλλων ἑκαστον, ὅσον ἐπιβάλλει αὐτοῖς. ὁμοίως τοίνυν ἀναγκαῖον ἔχειν καὶ περὶ τὰς ἠθικὰς ἀρετάς· ὑποληπτέον δεῖν μὲν μετέχειν πάντας, ἀλλ' οὐ τὸν αὐτὸν τρόπον, ἀλλ' ὅσον ἐκάστω πρὸς τὸ αὐτοῦ ἔργον, ὥστε φανερόν ἐστιν ἰδίαν ἡ ἀρετὴν τῶν εἰρημένων ἀπάντων, καὶ οὐχ ἡ αὐτὴ σωφροσύνη γυναικὸς καὶ ἀνδρός, οὐδ' ἀνδρία καὶ δικαιοσύνη, καθάπερ ᾤετο Σωκράτης, ἀλλ' ἡ μὲν ἀρχικὴ ἀνδρία, ἡ δ' ὑπηρετικὴ, ὁμοίως δ' ἔχει καὶ περὶ τὰς ἄλλας.

² Mr. Weldon endeavours to make some sense of the passage without transposing; but it will be seen that he is obliged to resort to conjecture in inserting ἀναγκαῖον ἔχειν before ἐκάστω to gain any kind of construction, and he is forced to supply in italics, for the

sake of the argument, a long sentence which we are in no way justified by the context in supplying.

³ Ed. 2nd, 1879. In ed. 3rd, 1882, he gives the passage as in Bekker, only mentioning the emendations in the note.

It will be observed that not only does the transposition of the sentences given in spaced type in the Susemihl column make the sense plain, but it is demanded by the grammar; for in the Bekker column what is the construction of *ὅσον ἐκάστῳ πρὸς το αὐτοῦ ἔργον*? 'Supply *ἐπιβάλλει*, or some such word,' says Congreve. Now this is quite possible and regular when *ἐπιβάλλει* goes before, as in the Susemihl column, but quite impossible when it follows, as in the Bekker column. It will be observed that two emendations adopted by Susemihl, *διανοητικὴν* for *ἡθικὴν*, and *ἰδία ἡ* for *ἡθικὴ*, are abundantly justified on a principle which ought to be regarded as an axiom in criticism. A corruption is very likely to arise from the erroneous introduction into the text of a word or conception rendered familiar to the copyist by the general character of the writer or writing on which he is engaged. Perhaps one might call this a '*corruption* *ἐξ ὑποθέσεως*,' or 'arising from the subject' of the work. The best example of it is, I think, Munro's emendation of *Lucr. II. 42* :—

Subsidiis magnis et ecum vi constabilitas,

where the MSS for *etecūvi* give *epicuri*, a word frequently occurring in the poem, and constantly kept before the mind of the copyist. Another good example is in *Soph. Ant. 40*, where for '*θάπτουσα*' the MSS give *θάπτουσα*, no doubt for the same reason, because the play turns on burying. So here *διανοητικὴν* and *ἰδία ἡ* have been ousted by the very Aristotelian words *ἡθικὴν*, *ἡθικὴ*.

Again, in *II. 6, 1*, in the interests both of the sense and grammar, we must bring up *καὶ περὶ τῆς παιδείας πολὺν τινὰ δεῖ γίνεσθαι τῶν φυλάκων*, and make it stand after *καὶ περὶ κτησέως*. Now if such bold transposition is *demanded* in these places, transposition is always justified when logical coherence and grammatical law together require it.

I will now make a few observations on individual passages, choosing chiefly such as may be briefly treated.

I. 2. 5.

ὁμοκάπους.

I am surprised that Dr. Jowett has not accepted this reading as explained by Mr. Ridgeway, 'having a common plot of ground' (= ὁμοκήπους). How could Epimenides, who wrote in hexameters, have introduced ὁμοκάπους, 'having a common manger.' Moreover, it is thoroughly characteristic of Aristotle to give the word of Epimenides in the dialect used by him. Cp. the quotation from Alcaeus III. 14, 10, and Ἀρχύτα, V. 6, 2. Plato, on the other hand, changes quotations from other dialects into the Attic.⁴

I. 2. 10.

ἄμα γὰρ φύσει τοιοῦτος καὶ πολέμον ἐπιθυμήτης.

The force of the ἄμα . . . καὶ is missed by all the versions I have seen.

'No sooner is he such (clanless, lawless, hearthless) by nature *than* his hand is against every man, he is militant, an Ishmael.'

I. 3. 2.

ταῦτα δ' ἐστὶ δεσποτικὴ καὶ γαμικὴ (ἀνώνυμον γὰρ ἢ γυναικὸς καὶ ἀνδρὸς σύζευξις) καὶ τρίτον τεκνοποιητικὴ καὶ γὰρ αὕτη οὐκ ὠνόμασται ἰδίῳ ὀνόματι.

ἰδίῳ does not mean 'adequate' or 'precise' or 'novel'; it means 'belonging to the word' (as being formed from the word itself). That is, we have δεσποτικὴ formed from δεσπότης, but we have not ἀνδρική, ποσική from ἀνὴρ, πόσις, nor πατρική from πατήρ; at least, ἀνδρική and πατρική are already appropriated to convey a different sense, and

⁴ Mr. W. Ridgeway, in *Cambridge Philological Transactions*, vol. II. p. 135.

ποσική does not exist. It is strange that he afterwards overcomes his objection to πατρική as correlative to δεσποτική: see I. 12. 1.

I. 6. 9.

οὐκ εἰσὶν οἱ μὲν φύσει δοῦλοι οἱ δὲ ἐλεύθεροι.

'All are not either slaves by nature or freemen by nature.'—J.

Aristotle had stated at the end of chapter v. that 'it is manifest that some men are by nature free and others slaves.' 'Here,' says Dr. Jowett, 'he affirms the opposite of his former statement'; yet of Bekker's insertion of εἰσὶ καὶ before οὐκ εἰσὶν he writes, 'The change has no authority and is not required by the sense.' If a change is not required by the sense to reconcile two opposite statements made within a short chapter of each other in summing up the writer's view on an important subject of discussion, then nothing in any sentence can ever call for a change. The inserted words in Bekker hardly amount to change, so easily would they have fallen out. Yet might we not thus construe the words consistently with his foregoing pronouncement, and without any insertion: 'There are on the one hand slaves οὐ φύσει, and on the other free οὐ φύσει'?

I. 9. 4.

ὅσον γὰρ ἱκανὸν αὐτοῖς ἀναγκαῖον ἦν ποιῆσθαι τὴν ἀλλαγὴν.

'Had it been so, men would have ceased to exchange when they had enough.'—J.

'Else the barter would not be carried beyond the point of satisfying mere requirements.'—W.

But 'had it been so' or 'else' would imply an ἂν in the Greek. Is not the meaning, 'Primitive men were *forced* to carry barter *only* to the point of satisfying their wants.' Cp. τοσαύτης = '*only* so much,' I. 13. 12; δεῖ δὲ τοῦτ' οὐχ ὁμοίως ἀκριβῶς ἔχειν, 'far greater exactness will be required' II. 6. 11; ἴσων 'mere equality,' II. 7. 18.

I. II. I.

τὰ τοιαῦτα τὴν μὲν θεωρίαν ἐλεύθερον ἔχει, τὴν δ' ἐμπειρίαν ἀναγκάζαν.

I think it will be found that ἐλεύθερος when of two terminations always means *liberalis* not *liber*. Therefore, I think Dr. Jowett is right in preferring the translation, 'a liberal pursuit.' He paraphrases the sentiment, 'A gentleman may study political economy, but he must not keep a shop.' Mr. Welldon renders, 'speculation is free.'

I. II. 9.

εὐπορήσαντα χρημάτων δλίγων ἀρραβῶνας διαδοῦναι.

'Having a little money, he gave deposits for the use of all the olive presses.'—J.

'He got together a small amount of money, and engaged all the olive presses.'—W.

Mr. Welldon's translation is apparently right, though the expression is a strange one.

II. 4. 7.

ἐνταῦθα μὲν οὖν ἀνάγκη ἀμφοτέρους ἐφθάρθαι ἢ τὸν ἓνα.

'In which case one or both would certainly perish.'—J.

'Such a union necessarily involves the destruction of one, if not both.'—W.

Susemihl translates the reading ἀμφοτέρους ἐφθάρθαι εἰ τὸν ἓνα. Perhaps we should read ἀμφοτέρους ἐφθάρθαι ἐς τὸν ἓνα, 'that both should be fused to their annihilation in unity.' I have already suggested (HERMATHENA, vol. IV. p. 39) φθείρονται ἐς for φθείροντες in VIII. (V.) 9. 9, in the sense of 'they rush madly into' (νόμονος there having good authority). But perhaps conjecture is unnecessary; for ἡ seems to have a peculiar meaning, 'or at all events,' in Aristotle: cp. II. 5. 27, where the right

reading seems to be *μὴ τῶν πλείστων εἰ μὴ πάντων μερῶν ἢ τινῶν ἐχόντων εὐδαιμονίαν* ' (how can the whole state be happy) unless most, if not all, of its parts, *or at all events* some of its parts, possess happiness?'

II. 6. 20.

[Susemihl's text, the words in square brackets are in the MSS, but are omitted by Susemihl.]

ἀλιγαρχικὴν δὲ ποιεῖ καὶ τὴν τῆς βουλῆς αἵρεσιν. αἰροῦνται μὲν γὰρ πάντες ἐξ ἀνάγκης [ἀλλ'] ἐκ τοῦ πρώτου τιμήματος, εἴτα πάλιν ἴσως ἐκ τοῦ δευτέρου, εἴτ' ἐκ τῶν τρίτων, πλὴν οὐ πᾶσιν ἐπάναγκες, <ἀλλ'> ἢ τοῖς [ἐκ] τῶν τριῶν [ἢ] τιμημάτων, ἐκ δὲ τοῦ τετάρτου [τῶν τετάρτων] μόνοις ἐπάναγκες τοῖς πρώτοις καὶ τοῖς δευτέροις.

This is the celebrated passage referring to Plato's complicated method of choosing the annual Council of 360, as laid down Legg. VI. 756, B-E. From that passage it is quite clear that the method of election was this:—360 councillors are to be chosen out of the first (or richest) class, and as many out of the second class, by universal suffrage, every citizen being compelled to vote. Then 360 are to be chosen from the third class by universal suffrage; but while the three richest classes are compelled to vote, the fourth class may abstain if they choose. Finally, 360 are to be chosen out of the fourth class by universal suffrage; but now the third and fourth classes may abstain from voting, if they please. Out of this body, 180 from each class are to be chosen by universal suffrage compulsory on all. Finally, from this last body are to be chosen by lot 90 from each class, or 360 in all.

Bekker gives us from the MSS a passage which can be reconciled neither with the Platonic passage nor with any possible theory assigning to it a meaning. Dr. Jowett translates straight through this fortuitous concourse of words, omitting only the words *τῶν τετάρτων*. But the necessity of

this omission shows that the MSS are not infallible. It will be seen that by a few further omissions Susemihl brings the text into harmony with Plato and with itself. Is it then reasonable to shrink from the further omissions, and present a text for which one is obliged to plead the excuse that 'Aristotle may not have remembered or may have misunderstood the words of Plato'? If Aristotle supposed himself capable of presenting to his readers a certain complicated scheme, to be criticised by him, but in fact forgot the scheme, or failed to understand it, it would seem that he is not a writer deserving our attention; and that Dr. Jowett, instead of translating the *Politics*, should have warned his pupils against the attempt to read the treatise.

II. 8. 6.

ὥς οὕτω τοῦτο παρ' ἄλλοις νενομοθετημένον.

'As if such an enactment had never been heard of before.'—J.

So Congreve; but would not this be μήπω? Mr. Well-don rightly, as I think, renders:

'A fact from which we may infer that no such custom had as yet been legally instituted in other countries.'

II. 8. 13.

τοῦτο δ' ἐν μὲν τῇ διαίτῃ καὶ πλείοσιν ἐνδέχεται.

'In an arbitration, even although the arbitrators are many.'—

J. and W.

'When there is more than one party to the suit.'—C.

I should prefer to understand with St. Hilaire:

'In an arbitration, and where there is more than one arbiter.'

The meaning is this:—a qualified verdict may be allowed in an arbitration, because the arbitrators (if there are more than one) can confer with each other; but jurors are not permitted to confer with each other.

II. 9. 28.

νῦν δ' ὅπερ καὶ περὶ τῆς ἄλλης πολιτείας ὁ νομοθέτης φαίνεται ποιῶν φιλοτίμους γὰρ κατασκευάζων τοὺς πολίτας τούτοις κέχρηται πρὸς τὴν αἵρεσιν τῶν γερόντων· οὐδεὶς γὰρ ἂν ἄρχειν αἰτήσαιτο μὴ φιλότιμος ὢν.

Dr. Jowett seems to make τούτοις masculine, rightly, as it seems to me. He renders :

'And here the legislator clearly indicates the same intention which appears in other parts of his constitution. He would have his citizens ambitious, and he has reckoned upon this quality in the election of the elders ; for no one would ask to be elected if he were not.'

κατασκευάζων is 'in trying to make.' Congreve makes τούτοις neuter, 'these means' ; Mr. Welldon and Susemihl read τούτῳ.

II. 10. 3, 4.

These sentences are held by Susemihl to be spurious. This is, perhaps, proved by the use of περίοικοι, in the sense of 'the neighbouring states.' For it seems impossible to attribute here to the word the technical sense which it should bear, and which it has in the next section, 'dependent population' as correlative to 'Helots.'

II. 10. 7.

συνεπιψηφίσαι.

'To assist at the putting of the question by the Cosmi (without any power of veto).—Ridgeway.

Not to 'ratify' or 'confirm,' which sense the word never bears in the active.

II. 11. 5.

τοῦ μὲν γὰρ τὸ μὲν προσάγειν τὸ δὲ μὴ προσάγειν πρὸς τὸν δῆμον οἱ βασιλεῖς κύριοι μετὰ τῶν γερόντων, ἂν ὁμογνωμονῶσι πάντες· εἰ δὲ μὴ, καὶ τούτων ὁ δῆμος.

The meaning is clear, but the καὶ is neglected by both

the recent English translators and by Congreve. With the above reading it is inexplicable. It could only mean 'if the Carthaginian kings and elders do not agree, then in this case *too* (as well as when they do agree) the Commons have a voice in the matter.' But they have no voice, plainly, when the kings and elders agree. For *καὶ τούτων ὁ δῆμος* read, by all means, with Susemihl, *τούτων καὶ ὁ δῆμος* (*κύριός ἐστι* being of course understood), and then everything is plain; the meaning will be, not 'in this case, too, the Commons have a voice,' but 'in this case the Commons, too, have a voice.' In the English sentence would any one hesitate to make such a simple correction, demanded by the obvious sense of the passage?

When a Dublin printer made Archbishop Whately call the public 'them asses,' was it rash to conjecture that what the prelate wrote was 'the masses'?

II. 11. 12.

ἐθίξεσθαι δ' εὖλογον κερδαίνειν τοὺς ὠνούμενους.

'It is natural that they should get into the habit of making a profit out of office, as they buy it.'

There is no need to read *τοῦτ'* for *τοὺς* with Mr. Welldon. The participle is similarly used above, II. 8. 10, where *πορίζοντες* means 'if they supply': *οἱ πορίζοντες* would mean 'as they supply.'

II. 11. 14.

κοινότερον τε γὰρ, κάθαρτερ εἵπομεν, καὶ κάλλιον ἑκαστον ἀποτελεῖται τῶν αὐτῶν καὶ θᾶττον.

'For, as I was saying, this arrangement is more popular, and any action familiarised by repetition is better and sooner performed.'—J.

Dr. Jowett will not here accept the simple transposition

of *καὶ* to stand before *κάθ'απερ*, though Aristotle has not said before that the distribution of work among many is 'more popular,' but has frequently said that it ensures the better performance of the work. It is evident that the clause *κάλλιον . . . θᾶπτον* conveys the sentiment that the work is better done when many divide among them the different parts of it than when individuals undertake the whole. This meaning emerges if with Susemihl we read *κάλλιον . . . ἀποτελείται <οὕτως ἢ ὑπὸ> τῶν αὐτῶν*. If Dr. Jowett's translation, above quoted—'any action familiarised by repetition is best and soonest performed'—is right, it is an argument for the concentration of various functions in the hands of one, if it is pertinent at all; and can *τῶν αὐτῶν* mean 'where the duties are the same'? Besides, *ὑπὸ* is recognized in the *ad eisdem* of the old translation. Mr. Welldon's 'the same work is more successfully and rapidly performed' evades the difficulty.

For Dr. Jowett's constant adherence to MSS. authority—he does not even read *τὰς τῶν ἔνων*, the admirable correction of the apparently unmeaning *τὰς τῶν νείων* in VII. (VI.), 8. 10—we shall, perhaps, find a sufficient reason in the concluding part of volume II., when it appears. We have examined his work enough to make it appear that, in his mind, Bekker has said the last word on the text of Aristotle. If we believed the whole treatise to be a congeries of inextricable confusion and contradiction, so woven into the woof and warp of the work, that to disentangle the thread of the argument would be to tear the web in pieces, then we should be disposed to think that a translation of this work is just what we do not want. We should want essays, lectures, on Aristotle, which should give us the 'great truths which reflect the mind of the master,' but not the medium which blur them. We look forward to part II. of Dr. Jowett's second volume, as likely to do

34 DR. JOWETT'S '*POLITICS*' OF ARISTOTLE.

great things in this way for the knowledge of Aristotle. We cannot accept the theory about the text of the *Politics* which seems to be implied in the parts which have appeared; but the vigour of the translation, and the historical and political instruction conveyed in the Introduction and Notes, make the work a very valuable contribution to Aristotelian literature.

R. Y. TYRRELL.

THE SO-CALLED POTENTIAL OPTATIVE.

‘There’s no such thing.’

IN considering the following examples, the scholar is reminded of the Golden Rule of Construction, that he is only to look to what is said, and not what it amounts to. This being premised, I lay down the following cast-iron principle for Attic prose and Iambics:—

The OPTATIVE—

A.—As—

I. Wish; or

II. Antecedent condition, always rejects $\alpha\nu$;

B.—As the consequence of a hypothetical, inexorably requires $\alpha\nu$.

A.—I. The optative as a wish rejects $\alpha\nu$, the only apparent exception being $\pi\omega\varsigma \alpha\nu$; but this really belongs to B, i. e. *if I did what, should I get what?* The optative in a wish may have been originally the antecedent of a hypothetical, e. g. *if I did something, it would be a good thing.* This may be illustrated by the subjunctive $\iota\omega\mu\epsilon\nu$, i. e. *suppose we go, it would be good.* But this is conjecture only.

A.—II. The optative as the antecedent of a hypothetical rejects $\alpha\nu$, save *only* as the survival of a previous consequent now used as an antecedent; e. g. *if A is B, B would be C; if B is C, C would be D*; in the second hypothetical, $\alpha\nu$ may be used as a reminder that what is now an antecedent did duty before as a consequent; but here $\alpha\nu$ is purely a survival.

It must be remarked that a consequence which is part of the antecedent does not require *άν*, e. g. *if there be a triangle, of which the angles at the base would be equal*; here *άν* is not required: as in *μεῖζον γὰρ άν τι εἴη ἄλλο καὶ πλὴν αὐτοῦ μεγέθους, ἐκείνο ἐν ᾧ τὸ μέγεθος ἐνείη*, Plat. *Parm.* 150 c: ἂρ' άν ἡγοῖο ταῦτα σὰ εἶναι, ἃ σοι ἐξείη καὶ ἀποδόσθαι καὶ δοῦναι, *Euthyd.* 302 a: τὸ ἀκρατέστατον ἐν ᾧ χρώματος μηδεμία μοῖρα ἄλλη μηδενὸς ἐνείη, Phil. 53 a.

If this were all, it would be plain sailing; but there are cases where what is expressed as a wish has been taken for a consequence. This may be illustrated by the colloquial *I'm hanged if I do*; and *may I be hanged if I do*. This view has been worked out by Mr. Tyrrell in the last number.

To apply this: a Wish may be stated hypothetically, *If some one would do something, it would be well*: still preserved in *εἰ, εἴτε*. It may be stated interrogatively; as in Shemitic, *who will give? for, if he give, it is good*. If then we assume that every wish may be stated as the antecedent of a hypothetic, and that the interrogative *τίς*, as marking no real question, became the indefinite, all supposed cases of the potential may be got rid of.

In a number of instances the difficulty has been made by wrong explanation. That is, the optative is not in the consequent at all, but in the antecedent, e. g.,

οὐκ ἔσθ' ὅπως λέξαιμι τὰ ψευδῇ καλά.

AESCH. Ag. 620;

which is *that I should say, is not*. The well-known passage of Pindar (not Attic)

τὸ γὰρ ἐμφυῆς
οὐτ' αἰθων ἀλώπηξ
οὐτ' ἐρίβρομοι λέοντες διαλλάξαιτο ἦθος,

Ol. XI. 19-21,

cannot be explained as a mere wish, for in that case *οὐ* is never used; but *οὐ* is the remains of the consequent, and the optative of the antecedent: *that lions and foxes should change natures is out of the question*. We have the skeleton hypothetic in *ὥς ἂν εἰ*, i. e. *if it would happen, it would happen so, as x happens*. It is further abbreviated in *ὥς ἂν*, e. g.

ἐγὼ δ' οὐ μὴ ποτε
τᾶμ', ὥς ἂν, εἴπω, μὴ τὰ σ' ἐκφάνω κακά

O. T. 319;

which is, *I shall never talk of the evil I am privy to, lest I bring the evils you have done into full light*. This makes sense without *ὥς ἂν*; but *ὥς ἂν* being added makes it stronger, *be it as it may, coute qui coute*; so in *Av.* 1508, cited by Prof. Jebb, *ὥς ἂν* is not final, but *under any circumstances*.

Cases like *τίς λέγοι* may be explained as if they ran in full, *if one tell, it would be well; who would he be? nobody*: cf. *Nemon* = will nobody = if somebody = let somebody. *οὐδείς ἀντίποι*, *Iph. Aul.* 1210, on the other hand gives us the answer, as well as the antecedent; *εἷς ἀντίποι*, *τίς ἂν εἴη*; *οὐδείς*. Virgil has a similar mixture:

Aeneas mortem contra praesensque minatur
Exitium, si quisquam adeat

A. XII. 760-1;

that is, he threatens, *si quis adeat*, and the result is that nobody—*quisquam*—does.

Since writing the above, I have read with much pleasure the discussions by Professor Jebb, *Oed. Col.*, pp. 273-5, and Mr. A. Sidgwick, *Choeph.*, pp. 122-3. I agree with Professor Jebb that the question should be narrowed to *Attic* usage. Mr. Sidgwick is near, what I conceive,

the true explanation, when he says it cannot be accidental that all the optatives without *ǎv* are of *interrogative* form, p. 122. My explanation does not rest on any abstractions of the grammarians, which the great Attic writers never heard of: it states explicitly that the Athenians wished to mark the distinction between the parts of a hypothetical as antecedent and consequent.

T. MAGUIRE.

NOTES ON MANUSCRIPTS.

I. QUINTILIAN.

A FINE old MS. is **Harl. 2664** of Quintilian's *Institutio Oratoria*. It contains the whole twelve books complete, and may be fairly attributed, I think, to Cent. XI. It contains 188 folia and 24 quaternions. These latter are numbered regularly to xvi. on fol. 24 v; but, on 132 v, begins again i., and so on up to viii. at 185 v. There is a blank of eight lines at the end of 161 v, where Book XI., chap. 1. concludes; chap. 2 begins at the top of 162 r. There are indices to Books I., VI., VIII., IX., X., and part of XI. The writing is larger than subsequently for the first 12 folia, but appears to be by the same hand; on fols. 90, 91, the writing differs from the rest of the MS., and is in darker ink.

On the first page of the MS. there is scrawled (omitting abbreviations):—‘Iste liber est maioris ecclesiae.’ It was bought by Harley’s librarian, Humphrey Wanley, on August 6., 1724, the same day that he bought Harl. 2767, the most important MS. of Vitruvius, from Sig. John James Zamboni, resident for the Landgrave of Hesse-Darmstadt.

Our MS. belongs to Fierville’s¹ second class, and more especially to the Zurich MS., the well-known Turicensis (saec. x. or xi.), and in a less degree to the Florentine

¹ To this class belong Ambrosianus I, veenianus, Bodleianus, Lasbergensis, Bambergensis G, Turicensis, Florentinus 46. 7, Argenteratensis, Almelo-Monacensis.

46. 7, and Bambergensis G; also to that hand in the Bamberg MS. called by Halm **b** (Praef., p. viii). Here and there there are striking resemblances to Almeloveenianus; but within its own class it does not at all bear any such close affinity to the Ambrosianus I as to the MSS. mentioned.

This conclusion is made on the basis of a complete collation of Book x., and a study of scattered places in other parts of the MS. To show its close affinity of T Fl.² and G or **b**, the following passages will be convincing, in which it agrees with these manuscripts in remarkable errors:—202. 7 (ed. Halm., vol. ii.) fluit autem qui; 203. 15 singulam maurem coram; 204. 4 locis ita petissimum; 8 it inueteris at est; 206. 7 ethini (*for* Aeschini); 211. 18 vel dictae in dicendo in secundo sententiae; 214. 3 ad haec; 215. 2 etsi est; 15 eo (*for* ego); 20 sublimior erit magis; 216. 2 praestatur; 7 charis in homine adductura Menandro scripta putant; 217. 23 hyperidesset ut non dixerim; 218. 15 oraculo de instrictis; 26 hystori HT (histori G, hystorie F) (*for* Stoici); 219. 15 pari in idem (*for* phrasin est); 220. 13 his (*for* diis); 225. 12 actu enea; 226. 21 ex quibusdam in periculo; 227. 14 fore enim aliquid optandum; 227. 21 studiorum nam materiam et orationem; 229. 8 nauigaretur; 230. 2 dissimulata; 20 iudicatis fuit; 232. 20 et quod de cuique longo conueniat; 235. 24 propter facultatem adfecero tum enim; 237. 7 cicilli liberatas (liberatis F³); 238. 11 nihil ap̃s; 24 quod inguitur calami repetitione (repetitione **b**) morantur; 239. 1 illis numeros usum; 29 spolliati ima; 240. 4 experantibus (ex imperantibus F) id qua idem; 243. 18 etiam in portio; 244. 2 componat sed uel etiam alias uel alias; 248. 4 gestus in gestu obseruationum (obseruationē **b**) in una; 10 uiui;⁴ 16 proderit alia si eum (ea F)

² The chief account of T and Fl. is to be found in Spalding.

³ No tradition of T here.

⁴ No tradition here of F.

tota loca; 250. 11 eruditis (erudito **b**) res erutio uolunt —
 stultis; 251. 19 inatrans (intrans F) illa. These, in addition —
 to several extensive *omissions*, such as:—213.5 varietas . . . —
 nulla; 12 quid . . . Vergilius; 226. 3 uerborum; 228. 17 — — —
 iuitia; 232. 28 quamque . . . gratia; 239. 15 inordinata — —
 digere; 240. 20 excogitandi etiam necessitas; 251. 24 di- — —
 cendo.

In the following passages (amongst numerous others),
 H is found in agreement with G—22. 11 (Halm., vol. ii. — 47
 Quint. vii. 2. 40) elalabant; 213. 8 thecus (*for* Theocritus); — —
 22 grata (grā = gratia G) sitam certe licere iam uacanit; —
 215. 1 ati (*for* attici); 12 athenieni; 219. 15 lueret eius; — — —
 17 luminis; 220. 8 senectutem maturbit; 221. 24 ueris is — — —
 serit; 223. 22 pugnam cum concitem cum praesertim. —
 And with **b** is the following, amongst numbers of others:—
 227. 8 non equidem quidem omnino conabor; 228. 26 nisi — —
 quod inmagō cognouisset; 233. 11 uocatu cuius; 242. 23 — —
 resalis.

It would be easy to go on for pages enumerating
 points of agreement of H with this whole family. But
 the above examples suffice to show that H belongs to
 it. The question remains as to its relation to the various
 members within that class. And here detailed proof would
 require such lengthened treatment that a few facts only can
 be adduced bearing on the point. And firstly, H agrees
 mostly with T. Such agreements as the following, with
 the reading of T in places where the latter does not exactly
 conform to the other MSS. of the same family, deserve
 notice:—202. 7 flex his; 203. 5 adhl&a (*sic.*); 210. 10 memo- — — —
 riam attis sperauerit; 225. 21 detracturus Sulpicius insign- —
 num fuit ut Servius sulpicius insignem in mero; 229. 25 —
 disnantur; 245. 11 tam odit anto netari labor; 246. 15 — —
 intrare portum ar al intra possum nauis accedere non leni-
 bus uentis uecta non possit; 250. 1 neque enim habet uisum —
 tamen est tamen habet aut necessitatem, and the striking

- - dittographia at 352. 4 (= xii. 10. 45 Spalding) nitidus aliquid atque affectibus pustulantibus itaque non solum ad priores catime grachis itaque sed ne ad hos quidem ipsis (T *omits* ipsis) oratorem alligandum puto atque affectibus postulantibus itaque non solum ad prioribus catime grachis itaque sed ne ad hos quidem ipsos oratorem alligandum puto atque id, etc. A similarly extensive agreement exists throughout various other passages of the MS. which I chose at random.

Where F differs from the other MSS. of the family H is found in some cases agreeing. But such cases of F being at variance with either T or G and **b** are few. However H agrees in the following:—233. 9 utilitas; 234. 2 intentis; 237. 9 mihi certe ui (uim F) demoni iucundus (the remarkable reading which puzzles Spalding so much); 16 uoluptatis ista; 243. 3 secundique; 246. 6 respectibus.

That H was not copied from T is certain. Considering the complete ignorance of Latin which the copyists of all this family of MSS. must have enjoyed, or at any rate the absence of any attempt to alter what was found in the original to correct Latin words and sentences, the appearance in H of such insertions as aliis severissima (vol. i. 58. 12) quidem (vol. ii. 204. 6), probabilis (212. 19), et velut (214. 9), saecula (220. 19), aeternum⁵ (222. 1), which do not appear in T, though they ought, must be acknowledged of very great weight.

That T was copied from H I cannot disprove. True I have not found any example of a correct reading found in T and wanting in H; and all the divergences which I have found are very few and trifling and could be easily

⁵ This word is omitted in the Argentinatensis called by Halm S. That H, though of the same family, was not copied from this MS. is obvious from such omissions in S as pluribus (vol. i.

5. 21) ea fuit (6. 17), feditas (28. 18), which are found in H. Besides S is a MS. of the 15th cent.; H is very much older.

explained from the ordinary inaccuracy incidental to copying. But I feel that I have not sufficient evidence to decide on the matter; so I shall leave it an open point.

That H was not copied from F is probable from the fact that *laudantur* (vol. ii. 205. 5) is omitted in F but inserted in H, as also *lascivia* (210. 18); while on the other hand *cesserit* (222. 23) is omitted in H and T but found in F.

We know that F is an old MS. of the ninth or tenth century, and that it came to Florence from Strasburg. This is proved with great skill and acuteness by Reifferscheid in the *Rheinisches Museum* (XXIII. 143 *sqq.* N.F.), who completely demolishes any claim which was laid to F being identical with Poggio's MS. The inscription in F shows that it was given to the Cathedral of St. Mary at Strasburg by the Bishop Werinbarius († 1028), and Reifferscheid also quotes Wimpfeling (fl. 1508), who says of this bishop: 'Multa dedit ecclesiae suae praesertim multos praestantes libros antiquissimos characteribus scriptos; quorum adhuc aliqui in bibliotheca maioris ecclesiae repositi uidentur.' Now let us remember that we found scrawled on the first page of H, 'Iste liber est maioris ecclesiae,' and that H is closely connected with F and its family, and we are led to the presumption that the archetype of the whole family was a MS. belonging probably to Werinbarius, Bishop of Strasburg, and from it was derived F and H, and possibly T, if we are not to suppose that T was copied from H.

II. CICERO AD FAMILIARES.

The MS. of Cic. ad Fam. **Harl. 2591** originally consisted of 211 fol.; now it has only 192, ten having been torn away completely. There are generally pages which contain the illuminated letters which were at the beginning of each book. Nine have been lost at the

end. The first letter of each epistle is generally illuminated in a fairly elegant manner. Each epistle has headings in red ink. There are a great many marginal notes by two, perhaps three, hands. In I. 2 it has the usual absurdity, *tiranni p. Lentulo*. Greek is generally added by a second hand, and a Latin explanation given of it.

The MS. makes the ordinary division of letters at 4. 17 (Orelli), but not so at 5. 20, though there is a note in the margin from another hand to signify that a division should be made. There is no new letter at 7. 6, but there is at 12. 41. After *latere* (19. 16) it adds *Vale*, and begins a new letter at *Quod me rogas*. It makes a new letter at 20. 30, but heads it *Cicero Lentulo salutem*. However a writer in the margin asks why P. Lentulus is here called a *iurisconsult*; this cannot be (he says) the same Lentulus as he to whom the other letters are addressed. There is no sign of a new letter at 37. 7, while a new one is commenced at 117. 20. Following the first letter of Book VIII. comes Ep. 10, then three lines of Ep. 2 down to *inquis*. It continues 126. 35 *vide modo inquis mihi litteris ostenderis*, and in the margin in another hand *al. ne inquis*. At the word 'spem' which immediately precedes 'mihi litteris ostenderis' (135. 24), Harl., No. 2773, stops in the middle of a sentence. Note the somewhat clever attempt at correction. Our MS. then finishes Ep. 9, and continues regularly to the end of Book VIII. It has IX. 18. There is no sign of XI. 13a. It transposes XI. 27. 28 putting the letter *from* Matius first. At 224. 19 and 227. 16 it commences new letters; but not so at 226. 26 or 227. 1. After XIII. 49 comes in the letter to Caelius (II. 14). After XIII. 77 appear XII. 29 and 21. At XIV. 6 it heads the letter not *Suis S. D.* but *Tulius C. S. d. Terentie sue*. It omits XIV. 21. After XV. 6 comes XV. 9, then 7 and 8. The MS. ends at *nunc* 293. 17. The order in XVI., as far as it goes, is 5, 7, 1, 2, 3, 4.

It is written by one who knew Latin pretty well,

and generally put down only what made fair sense. It presents a singularly large number of correct readings where M is in error. For example, in the following—(The correct reading of our MS. is enclosed by the bracket; the erroneous reading of M follows outside it):—9. 27 oportere] optere. 10. 28 se assequi] sed adse qui; 12. 17 sine nefario] sinefario; 21. 14 genere] negere; 28. 31 ab adolescentia] abulescentia; 31. 13 malevolum] malevorum; 39. 11 decederes] decedes; 41. 3 appio] apud; 47. 5 suspicio] suscipio; 49. 30 temporum] tempus eorum; 52. 8 nos] nostro; 55. 28 postquam] potestquam; 18. 27 egregium] aegrium; 70. 29 desiderant] desierant; 72. 39 eximium] exium; 87. 10 fruire] fuere; 91. 17 uelit] uelim; 97. 7 commorandum] commemorandum; 104. 7 opperiri] opperi; 104. 30 in quo] in eo; 109. 10 consciscenda] conscidenda; 112. 2 didicisse] didisse; 122. 21 quae stultis] qua est uitis; 122. 25 de preteritis] praeteritis; 136. 18 paludati] plaudati; 146. 13 severitatem otiosorum] si ueritatem otio solum; 147. 23 Caninius] animus; 152. 22 iocatus] locutus; suo non] suo 163. 31 ioci] loci; 167. 22 positus] possit eis; 168. 39 salutis] satis; 195. 37 elabatur] elaboratur; 202. 37 metuam] metuo; 211. 11 ageres] ages; 233. 26 adhibetur erga illos] adhibeturga illos; 237. 7 et usui. Nam] eius uinam; 269. 30 Tulliolumque quae] Tulliolum quae; 276. 19 tueretur] tuetur. And it would be easy to add several times as many instances.

But this must not conceal from us the fact that most of these are easy corrections for the copyist if he knew Latin and paid attention to the drift of the several passages. In some cases he makes palpable emendations; for example, 11. 15 a qua; 53. 29 statim (statum M., statutum Harl. 2773) 58. 25 tum (lum *for* luctum M), 87. 17 nunc centum (nunc gentis *for* nongentis M); 145. 19 amico (animo *for* Caninio M); 146. 24 (optime optiae *for* Ostiae M); 156. 12 delectari (delibitari *for* debilitari M); 159. 37 trinummo (Demiurgo M);

169. 12 putaremur (patiremur *for* partiremur M); 178. 18 habeo (habeam M¹, habebo M²); 181. 26 et rusum (etrusum *for* extrusum M); 215. 26 dum servi essemus (dum servi eremus M); 220. 5 extra mare regio (extrema re regio *for* extrema regio M).

Yet, at times, the copyist writes the greatest nonsense, such as 139. 10 scis domicio diem tu morare es; 216. 38 equidem multo parcius scripsi mirari nolim iras te horum amentia nec me meae ullae, etc. But note that the words he uses are always Latin.

It does not appear to have any connexion with Harl. No. 2773. It does not exhibit the large lacuna 18. 4 to 21. 16, and it has not Epistles 2 to 7 of Book VIII. Moreover, in two cardinal passages, or where Harl. 2773 has the right reading, viz. 58. 41, maius mihi solacium afferre ratio nulla potest; 63. 13, uti medicos ei mitterem. Itaque medicos coegi. Our MS. reads in the first, maior mihi ratio afferri nulla potest; and in the second, et rogaret uti medicos cogerem et e vestigio with coegi in the margin. It has not the transposition in Turonesis and Parisinus of idque 16. 38 to 'peri', 17. 35 from its right place to after 'mons' 27. 18. See Streicher in Comm., *Phil. Jen.* vol. iii.

Nor is it connected with the same family as Harl. 2682; for none of the important additions found in this letter appear in our MS., viz. the additions at 164. 21 tuaeque curae; 175. 41, exercitu concordii et bene de rep. sentiente; 180. 5 numeroque hostis habueram; 182. 12, officio satisfactum; 185. 9, D; 198. 13 fecit; 216. 39 quam revera furere inveni. Quod vero aliquid de his rebus scripsi; 276. 18 et tamen adolescentem essem. And, on the other hand, in our MS. there are not the following omissions of 2682, viz. 154. 32 aliquo—uno; 181. 41 V. Kal. Sext. ex costris; 186. 22–24, Quod cum Lepidus—contrarium fuit.

There occasionally occur striking agreements with Ernesti's text: *e. g.*, 24. 3 cumulandoque illustrare; 29. 30

militaremque rem collocassem; 39. 26 fiant; 47. 13 nimirum ex epicteto, *omitted*; 141. 24 eo cum 4^{or} cohortibus; 155. 3 dictorum offensiorum fama; 168. 2 tua; 196. 39 septenum numerum legionum; 200. 35 timendum suspicandumque putares; 24. 23 fiant, &c.

In the following passages it is notable that in our MS. the correct reading is found. 23. 4 in his esse elaborandum; 43. 16 Tu si istius modi; 52. 14 uidemur; 150. 17 eo; 154. 1 ponor; 192. 2 nobis non conscripsissemus.

The fact that, in four passages at least, Arabic numerals occur, viz. 141. 25 cum 4^{or} cohortibus; 209. 23 idem 30 post die; 220. 23 itaque 100 circiter amissis; 220. 26 ad 800 antiochiam redisse, coupled with the comparatively extensive knowledge of Latin possessed by the copyist, and the many plausible emendations exhibited, lead one to consider that the MS. cannot be earlier than the 14th century at all events.

III. THE AUGUSTAN HISTORY.

There are few classical authors critically edited with such completeness as the Augustan History. We have two splendid critical editions, one by Jordan and one by Peter. In both, allusion is made to a MS. of the writers of that history, which is preserved in the British Museum. As a matter of fact, there are two such MSS. in that Library, both belonging to the Harleian collection, one of some slight value, the other of no value at all. Of these I subjoin a short account.

Harl. 2658 is a MS. written on smooth parchment, contains 178 folia, 28 lines in a page, and about 57 letters in a line. The writing is beautifully clear. Harley got it on June 17, 1721. The first letter of each life is highly ornamented in colours and gold, that of Hadrian especially. It contains a picture of Hadrian, and also of Severus and Heliogabalus. The index is at the end. It has been

copied by Ioan. Vigetius, as he tells us in a marginal note to Valerian's life.⁶ It is corrected throughout by two or three different hands; but the corrections are not very numerous. The erasures are few. There is no heading to Hadrian's life; but the lives generally begin (in red) thus, *e. g.*, Incipit vita Helii Lucii Veri Ceionii Caesaris Scripsit Helius Sparcianus feliciter. The parchment has been subjected to damp: and some of the leaves are seriously stained with some brown substance; fol. 103*b.*, 104*a.*, 105*b.* are almost wholly illegible. It ends 'contendas feliciter ITERVM'; then in red letters, FINIS AMEN DEO GRATIAS ET EXPLICIT FOELICITER.

The order of the lives is the same as that in the index of the archetype of B and P, as given by Peter, Preface, p. xi. *sqq.* (my references are always to Peter's 1865 edition). Our MS. (which we shall call H for the future) has also, at the end, an index, which virtually⁷ agrees with this order. The lives are all attributed to their ordinarily-received authors, except that those usually said to have been composed by Trebellius Pollio are assigned to Capitolinus. In H, in the middle of the life of Pescennius, at 150. 33, there is a heading indicating that the life of Clodius Albinus begins there; but really the life is added after that of Opilius Macrinus.

The transpositions in the life of Alexander, as they appear in H, are well worth notice. It goes on straight⁸ to 259. 17, where it reads:—*omnes Cristianos futuros si id optate venisset omnibus honoribus est ornatus*, thus omit-

⁶ At ii. 68. 3 (ed. Peter, 1865) this note is added in H:— 'Hic mihi videtur esse defectus libri non enim iste est mos vitas describendi ut a medio initium faciat: sed quod repperi ad litteram etiam in medis (I cannot make out what this stands for) saepius videns exscripsi huiusmodi voluminum raritate coniunc-

tus Ioan. Vigetius.'

⁷ After the life of Tacitus, it has, 'et taciti de floriani' (*sic.*), and after Probus, 'aliquorum V.'

⁸ Except that it omits by corruption *ex homoeoteleuto* (259. 11-13) frequentavit . . . qui.

ting 259. 18 to 269. 30. It then continues on from this latter place to 270. 18 gravissimum reip. This ends fol. 100. The next begins DE TEMPO CRISTI . CHRISTO templum, etc. (259. 11), and continues (reading in 259. 18, si ^{fecissent} id optate venisset et templa reliqua deserenda) down to 269. 29 et apud populum lectis omnibus hominibus est ornatus (270. 18) atque sibi per germanorum vastationibus, thus omitting 269. 30 to 270. 19, which it had already inserted. Note that H omits altogether 269. 29, vario tempore cum etiam de Isauria. At II. 6. 12, it reads—with a marginal note to the effect that this passage had occurred before, and was superfluous here—Occiso Heliogabalo uti primum fecisset et templa reliqua deserenda, and so on for two pages, from middle of fol. 108*a* to middle of 109*a*, down to annonas acciperent—a passage which appeared in the life of Alexander (I. 259. 17 to 262. 8), and had been inserted in H previously. Then there is added in the margin—Occiso Heliogabalo ubi primum sensit

H has *not* the transposition in the lives of Carus and Numerian, referred to by Peter, Pref. p. xiv.

Next we may give the readings of H in the mutilated passages of the lives of Valerian and Gallienus—II. 72. 12 de quo iam multus uobis fuit Sermo Salomnum (*sic.*) filium Gallieni qui et gallienus dictus est in libro adiuncto ad aliud uolumen transeam. semper enim me uobis dedidi et famae cui negare nihil possum EXPLICIT FRAGMENTVM VALERIANI INCIPIT EIVSDEM GALLIENI D. V. FOELICITER, etc. 73. 7 gauderet uocabantur exercitus murmurabant duces: erat omnium meror quod imperator ro. in persia serviliter teneretur—*space for about 13 letters*—ior omnium—*15 letters*—quod gallienus na—*14 letters*—p̄r fcō sic—*11 letters*—moribus reip. perdiderat, etc.

74. 5 remp. defensandam capessèrent. Sic igitur macrino delatum est imperium he autem cause imperandi macrino cum filiis (*no lacunae marked in H in this place*).

74. 14 ad omnia militaria (*no lacuna*).

74. 15 Ergo macrinus—12 *letters*—undique aux^a petit occupatis a se partibus quas ipse—9 *letters*—posuerat itaque imperium—9 *letters*—hoc bellum instruxit cum p̄r esset omnibus quae contra eum poterant cogitari.

76. 13 Sed dux gallieni theodotus conflictu habito coepit atque imperatori uiuum transmisit. Egyptum enim data est emiliano per terra si—15 *letters*—thebitinos milites—32 *letters*—uitium est—50 *letters*—rebus cum Gallienus in luxuria et in probitate persisteret.

76. 25 Contra hunc theodotus exercitum duxit quod cum urbem in qua inerat postumus obsidere cepisset decernentibus Gallis gallienus muros circumagens.

H belongs to the same family as B and P, *i.e.* to the Π family (if we may adopt Peter's nomenclature), and especially to the Vatican Codex, No. 1899. Peter has given a full tradition of this on the life of Hadrian only, and made allusions to it in a few other places here and there. As far, then, as I was able to make the comparison, I found H presenting a striking similarity to V, *e.g.* 3. 15 virum *for* tunc; 4. 19 consuleret sortes; 28 nicheforii; 6. 14 familiar; 23 michi; 8. 18 rex alanorum; 9. 10 honore uel onere; 12. 8 non *added after* noti; 24 sui; 27 vellet; 15. 9 arismeticae; 27 catalinum; 16. 9 usurparent; 16 catacaymos; 17. 11 quidem; 25 summatibus; 19. 18 advocavit; 21. 9 liberorum; 21 latum; 22. 2 baccianorum; 23. 21 decreto senatus consulto eundem; 23 dictauit; 26. 3 accellarias; 155. 5 misissem; 16 accedam; 168. 29 uero excusationem *added*; 173. 5 permittentem; 226. 5 nemo uir p̄ tum, *with one letter erased before* p̄; 228. 8 heliogabali; 229. 5 antoninum; 230. 23 cottidianos; 231. 2 aculem quem; 14 mater *added after* festo; 254. 9 cochi; 254. 15 gallia. II. 33. 20 iuuenes Gordiano filio suo *inserted*; 39. 13 imperauit (impe-
rauerunt V) anno uno mensibus sex. There are a very great number of other agreements; the ones given are

only the more important ones. As regards differences, I did not find any important⁹ ones, except the following:— 4. 8 peritia H, pererat V¹, persenserat V²; 7. 2 loquebatur H, loquebatur vel loqueretur V; 14. 21, feras immanius H, feras manis V; 15. 9 litterarum H, lioterarum V; 22. 14 sivit H, siniit V. II. 106. 24 expeditissima H, se expeditissimam V.

H has nothing whatever to say to the Σ family; for, as we have seen, it exhibits the transposition of pages in the life of Alexander, and shows no trace of the additions mentioned by Peter, Pref. xxi., as occurring in Σ after the lives of Maximus and Balbinus.

But such is not the case with **Harl. 4121**, which most distinctly belongs to the Σ family. It has all the evidences of such given by Peter, Pref. xx., xxi., besides *not* exhibiting the transposition of leaves in the life of Alexander. It has 3. 15 praetorium *uirum*; 168. 24 atque inde Romam *contendens* redit; 169. 10 retentus ne *uideretur* ac augetur; 171. 2 designati *for* damnati; also the insertions mentioned as occurring between the lives of Maximus and Balbinus and that of Valerian, viz. ¹⁰Hic ab his hystoriographis, etc., down to periit; and, further, the life of Valerian is commenced in this MS. in the same manner as is given in the edition of Casaubon, pp. 181–2, viz. Valerianus inter haec in Rhaetia existens, &c. It also exhibits the following readings:—7. 1 supposito qui pro Trayano fessa voce loqueretur; 9. 10 ne magistratus hoc onere grauerentur (*cf.* Peter, Pref. xxiv); 7. 7 Bactriani; 19. 28 lauacrum Agrippae (Pref. xxvii).

⁹ By unimportant variations is meant such as—3. 5 hispaniensibus H, hispanientibus V; 4. 6 mathematico H, mathemico V; 15. 10 psallendi H, psalendi V; 23. clarum H, darum V.

¹⁰ Before these words H has:—De

duobus Deciis ex Budalia. Eodem Julio Capitolino (then follows a word I cannot read). And before 'Hic etiam obmittuntur' H has De Gallo et Volusiano. Idem Julius Capitolinus breviter meminit.

It exhibits a very close resemblance to the *Cod. Regius*, so often mentioned by Casaubon; and this is to be expected, as both belong to the Σ family. As examples of this resemblance, we may observe the following¹¹:—17. 18 ut Choni *for* ita ut uni; 21 sumptus *omitted*; 22 semper *omitted*; 25 sūmātibus; 26 quibuscumque iussit sibi ap-
poni; 27 publice et frequenter; 30 ceteras partes; 18. 3 verum quom alio die; 6 acutissimus (accuratissimus *Reg.*) *for* iactantissimus; 10 etiam *omitted*; 12 hyabeorum; 16 trecentas; 19 Iulium; 20 Iulianum et Priscum atque uera-
cium; 21 omnis senatus; 23 ulla; 25 crimina nomina; 19. 2 aequaliter; 5 detractores; 6 cathomididiari; 8 libra-
uit *for* separauit. The differences in these two pages are very few. Disregarding slight variations of spelling (such as clamides and clamydes), we find—18. 14 magnificentia (magnifica *Reg.*); afrasmane (asyriasmane *Reg.*); 15 in-
gentia inurna dono accepisset; 19. 10 seruire *for* sentire.

The MS. consists of 433 pages of writing; page 434 is blank. It is written on parchment in a running hand, and appears to belong to the 15th century. It is highly ornamented in the capital letters. It begins:—‘Vita principum Romanorum aliorumque qui tyrannice remp. inuaserunt. Diui Adriani vita feliciter incipit Haelius Spartianus’ (in gold letters). It only goes down as far as *parietem* (Car. 19. 2 = II. 226 14), with a marginal note, Deficit in exem-
plari. The conclusions and beginnings of each life are in yellow ink, generally of this nature, *e.g.* Explicit de Marco Antonino Augusto. Gesta Veri Lucii Helii Antonini Augusti incipiunt foelciter. Julius Capitolinus est auctor. On the first two pages especially, and in stray places throughout, there are a great many notices of the readings of Vatican MSS.; but none of them seem to be Vat. 1899.

¹¹ Peter, in his new edition (Leipzig, 1884), pp. xxxvii. to xli., has given a

collation of the Life of Hadrian in the *Cod. Regius*.

There is a large omission in the life of M. Aurelius, from (48. 6) patris, down to (51. 6) sermonibus. It is, however, supplied at the end of the MS., in a different hand, on pp. 435-6-7. There is another large omission (not supplied apparently elsewhere) in the life of Claudius from 125. 23 ac to 128. 2 scriptores. After templum 125. 23, there 7½ lines of p. 343 of the MS. vacant, and a note, Hic multum deficit iudicio meo.

On the first page at the top is—'Petri Thomae ex bibliothecae uolumen sectum. Tam cassidem quam codicem (I do not know what this means). Then, in the margin—'Pontificiae et Vaticanae bibliothecae libri manuscripti in pagina praeliminari sic habent: vetustissima una | gesta et uitae superscriptorum principum scripserunt infra scripti historiographi ec | tres alii mmss. | vitae diuersorum principum et tyrannorum a diuersis compositae | variat et alter Helii Spartiani indiui hadriani vitam liber incipit ec.

The order and authors are somewhat different from that of the archetype of B and P. Didius comes after Pertinax and before Avidius; and after Pescennius the order is Clodius, Caracalla, Geta, Opilius, Diadumenus, Heliogabalus, Alexander, xxx. Tyrants by Trebellius Pollio. After xl. Æmilianus comes in De Alexandro vel Alexandrino. After Tetricus comes Trebellianus, Celsus, Herennianus and Timolaus, Zenobia. The life of Heliogabalus is attributed to Lampridius, and that of Alexander to Spartianus.

On the whole, the MS. appears to be a quite worthless member of a comparatively worthless class.

LOUIS C. PURSER.

THE ARGUMENT OF THE 'PHÆDO':

RECENT EDITIONS.

THE increased interest taken in these islands in Idealism is shown by various writings in which the chief topic is the matter of Plato. In the *Journal of Philology* Professor H. Jackson is presenting us with a series of Papers which examine the Idea from its psychological side; and recently we have had two editions of the *Phædo*, one by Mr. Archer-Hind, and the other—the second edition—by Principal Geddes of Aberdeen. Both editions add considerably to our knowledge of the subject-matter, and, before criticizing some details in each edition, I propose to show that the whole argument in the *Phædo* is complete, that is to say, it is evolved from an empirical datum in such a way that in the end Subject and Object are united by affinity of essence. This, I think, can be made clear not only to those who accept, but to those who reject, what is called German Philosophy.

The progress of the Dialogue is:—Socrates has just had his chains taken off; he feels the pain caused by them closely followed by pleasure; this suggests *Æsop*, whose fables Socrates was directed by a dream to versify, though he had hitherto held that Philosophy was the true poesy, as philosophy involves preparation for Death and the state after death; but as this implies the Immortality of the Soul, the question arises, What are the grounds for holding that doctrine? just as Butler tells us religion presupposes a further state. These grounds Socrates proceeds to set forth.

Archer Butler has well remarked that philosophy may be found in Plato as algebra may be found in arithmetic—in the concrete. Plato is right, however, in stating everything is the concrete. There is no real abstract existence; though since Aristotle's time argumentative language is abstract much to the hindrance of true thinking. Hegel, for example, owes much of his apparent unreality to his use of abstract language, in spite of the clearness with which he denounced the abuses to which it has given birth. Even still the great difficulty of the student of philosophy is to get rid of the misleading effects of abstraction when he attempts to construe the Universe that lies before him.

A Platonic argument is always one in the sense that each moment leads of necessity to the next, and so on until the whole is completed. It is in this way the antithesis of Aristotle's argument in which the parts are isolated and connected only by mnemonics, like the kings of England or of Judah and Israel. But Platonic argument is an organic structure—plurality, or the empirical elements, converging to unity, and unity, or the intelligible element, diverging to plurality—neither being found by itself.

To apply this to the *Phædo*:—If it will be better hereafter for the good than for the bad, it is implied that the Soul exists in the hereafter and is immortal. That it is so is evidenced by the following:—

I. *The first moment*.—From 69*d* to 72*e* we have the argument from its most empirical side—Contraries come of contraries—consequent of antecedent, each consequent in turn to be the antecedent to a new consequent. If this process of interchange be not perpetual, some one state must set in for an eternity of monotony. The strength of this argument may be measured by the effect of the modern hypothesis that if Energy is dying out, we must look forward to a period of cold and colourless uniformity of Quantity and Quality—a universe of drab. Some of the

Physicists who hold this view do not see that the decay of Energy still leaves Quantity, Quality, and Space; consequently, a universe, and therefore a universe of thought. Of course Plato does not mean that a period passes which is all A, and then becomes all B, having ceased altogether to be A, as George I. is succeeded by George II., but he means that the two opposite processes are always at work, wrestling in giant's embrace. Any Hegelian can see this.

This argument, as Principal Geddes says, "proves merely the existence of certain *Processes* called Life and Death, in which nothing *is* but all *become* (γίγνεται), and does not imply the existence after death of the human soul. The conception of Being here unfolded is that of a vast Sea, out of which by one transition souls are sublimed, like the particles of water, into a region where they are for a time invisible, until by a new transition they descend, and reappear in the sphere of the visible, without, however, necessarily preserving their individuality," p. 47. Mr. Archer-Hind points out that "though the law of alternation may afford a strong presumption that our souls return from the dead, this does not amount to certainty, since we cannot tell that our knowledge of the conditions is complete," p. 11. But the fact is, that there is no γένεσις without an ἀρχή which is not γένεσις (*Phaedr.* 245 cd.; in other words, the γένεσις of Plato involves the immanent negative which is the basis of individuality, though in the argument it is not made explicit.

II. *The second moment.*—This is the argument from ἀνάμνησις, and extends from 72e to 77b. When understood, it is most interesting; for it is virtually the Kantian argument swung round from the subjective to the objective: viz. that the empirical element is only intelligible by means of an element which is not empirical. Percepts imply an element which is constitutive and real, and among these real *priora* is a notable *prius*—ψυχή. The relation of these

priora to ψυχή belongs to the last phase of the argument. But even up to this Plato is superior to Kant, as the intelligible element is not subjective, and we are thus saved from Subjective Idealism. The real essence—ὁ ἔστιν—has a larger quantum of reality than the sequential element.

III. *The third moment.*—The argument from the nature of the *prius* ψυχή. This, with notice of objections, extends from 78b to 90c, and brings out the Hegelian doctrine that experience is made up of contrary data. This is the view elaborated in the *Parmenides* that the universe τὸ πᾶν is one and many, or, as Aristotle constantly puts it, the Idea is constituted of τὸ ἐν and τὸ ἄπειρον.

IV. *The fourth moment.*—This extends from 91c to 102b, and is the argument that the qualities of the *prius*—ψυχή—are inconsistent with Materialism. I may point out that the illustration of the Lyre is precisely on all fours with that of Huxley in his article on Berkeley, with that of G. H. Lewes in the *New Phædo*,¹ and with that of the votaries of reflex-action as an explanation of consciousness. This argument takes into account the moral qualities, and the power of resisting impressions—Free-will.

V. *Fifth and last moment.*—This extends from 102 to 107c, and it asserts the essential affinity of subject and object—their identity of quality. This is really the modern argument that since thought is the condition of matter so called, matter cannot be the essence of thought—that thought within us is exactly similar to thought without us. Death, therefore, as a material process, cannot destroy that which sensation presupposes and without which it could not have its inferior existence.

Briefly the argument is this: 1. Sensation gives us contraries; 2. In these there is a *prius*; 3. The *prius* is opposite in quality to the *posterius*; 4. The *prius* is not

¹ *Blackwood*, Feb. 1884, p. 72.

material; 5. The *prius* is consequently spiritual, and so divine. The myth states in the colours of the imagination that the objective corresponds with subjective aptitude.

That soul is thought, or of the nature of thought, would be much more readily admitted in the present day than the converse, that thought is soul. The criticism of Anaxagoras in the *Phædo* is well known, but its significance has not been remarked. Socrates virtually says that the νοῦς of Anaxagoras is not a final cause, as it should be: for if νοῦς be νοῦς—that which knows—it must distinguish, and so be a *principium optimi*: hence it must be good. In other words, there are two theories of Intelligence as a constituent of the universe: it begins; and it begins and ends. Thought is not merely Efficient but Final. And in this view Plato and Aristotle concur, for Aristotle censures Speusippus and the Pythagoreans for making τὸ κάλλιστον καὶ ἄριστον μὴ ἐν ἀρχῇ εἶναι, *Met.* A. 7.

Thought, accordingly, if it knows, knows something, and therefore knows itself; for, as Anaxagoras points out, in order to know, it must separate itself from the rest; *i.e.* in modern language it must make itself a subject distinct from the object.

Nature, as Cudworth says, may be *ratio mersa et confusa*; nature may, as Hegel says, be fossilized thought; but this means that all nature is an object for some subject, *i.e.* νοῦς begins and ends. This answers Professor Teichmüller's objection that in Plato there is no principle of individuality.

What, according to Plato, were the laws of mind, of objective thought? The Numbers, of which we obtain glimpses in Aristotle and Xenocrates. The account given by Syrianus, a zealous Platonist, coincides with what we have of the older authorities.

I cannot agree with Professor H. Jackson's account of

the Numbers in the *Journal of Philology*.³ My view is as follows:—Aristotle, *A* 6, has the following account of the metaphysical process:—ἐξ ἐκείνων γὰρ κατὰ μεθεῖν τοῦ ἑνὸς τὰ εἶδη εἶναι τοὺς ἀριθμούς. Ἐξ ἐκείνων refers to the double aspect of τὸ ἄπειρον—τὸ μέγα and τὸ μικρόν; so that the passage may be rendered thus: *Out of the double indefinite, by participation of the one, the Ideas (the genus) are specialised as the Numbers.* That this is the true construction may be seen from the passages εἴπερ ἕκαστος τῶν ἀριθμῶν ἰδέα τις *N* 2, and οἱ μὲν οὖν τιθέμενοι τὰς ἰδέας εἶναι, καὶ ἀριθμοὺς αὐτὰς τιθέμενοι, *ib.* 3; also ἀριθμοὺς δὲ τὰ εἶδη ἐκάλουν; Philop. *ad Ar de a* I., fol. E 11, and ὁ μὲν οὖν Ξενοκράτης ἀριθμοὺς τὰ εἶδη καὶ αὐτὸς προσαγορεύων, Simplic. *ad Ar de a* 16 B. That is, in Aristotelean language, ἰδέα is genus; which, by means of difference, τὸ ἑν, becomes species, Number. The Numbers are 2, 3, and 4, the analysis of which I have given in preface to "Parmenides," sects. 38–43.

This being so, Aristotle's notices of the Numbers are quite consistent. The one (which is not a number) in combination with τὸ ἄπειρον produces ἰδέαι—the general term for any combination of τὸ ἑν and of τὸ ἄπειρον. Each special combination is ἀριθμός; and these ἀριθμοί are either *πρώτοι*, or not. The *πρώτοι* are 2, 3, 4; and these, in combination with the *δυνάς*, make sensible particulars. The dyad is plasticity, ἀνεκλειπτός, in two directions, τὸ μέγα and τὸ μικρόν. So that while the idea has only one volume of the dyad, sensible things have two volumes, viz. the dyad in combination with the one in the Prime Number, and the dyad acted on by the Prime Number so as to generate squares and cubes, surfaces and solids—οἱ δεύτεροι καὶ τρίτοι ἀριθμοί, Syrianus, 906, *b* 30–32; Aristotle, *Met.* A I. vi. 7. This view also explains why Aristotle treats the idea as not necessarily connected with the idea specialised as Number;

³ Vol. x. pp. 285–294.

Met. M. IV. 1. The Mathematical Numbers are formed by combinations of the moments of the Prime Numbers considered as mere abstract units. Hence the Abstract Numbers are *συμβλητοί*; the Prime Numbers are *ἀσύμβλητοι*, *M. VI. 1.*

In modern language, sensible things, according to Plato, are functions of agencies qualifying in accordance with Number addible or divisible quantity. This explains the genesis of the *Timæus*, and the three ingredients, *ταὐτὸν*, *θάτερον*, and *οὐσία*. A theory similar to the Platonic view, that structure is a function of Number, was applied to Botany by the late Professor W. Allman of this College.

I have noticed the following passages in both editions:—

62. a.

On this I wrote in 1870:—

‘In a critical point of view the *Laches* is interesting, as there are at least three coincidences between it and the *Phædo*. First, the comparison of the ethical qualities to coin; cf. *Phæd.* 69, a. b., with *Lach.* 192, e. Second, the use in both of the phrase *μὴ προαφίστασθαι*, *Phæd.* 85, c. *Lach.* 194, a. And third, as to the ethical value of Death, *Lach.* 195, d., and *Phæd.* 62, a. But, as the last passage has been much disputed, and, as I think, erroneously interpreted, I offer the following explanation.

One passage runs thus: *σὺν πᾶσι φῆς ἄμεινον εἶναι ζῆν καὶ οὐ πολλοῖς κρεῖττον τεθνάναι; Οἶμαι ἔγωγε τοῦτό γε. Οἷς οὖν τεθνάναι λυσιτελεῖ, ταῦτ’ αἰεὶ δεῖν εἶναι καὶ οἷς ζῆν; Οὐκ ἔγωγε.* *Lach.* 195, d. The meaning of this is certain, *there are persons, for whom it is better to be dead; and there are persons, for whom it is better to live.*

‘The passage in the *Phædo* is, *ἴσως μέντοι θαυμαστόν σοι φαίνεται, εἰ τοῦτο, μόνον τῶν ἄλλων ἀπάντων, ἀπλοῦν ἐστι καὶ οὐδέποτε τυγχάνει τῷ ἀνθρώπῳ, ὥσπερ καὶ τᾶλλα, ἐστὶν ὅτε καὶ οἷς βέλτιον τεθνάναι ἢ ζῆν. οἷς δὲ βέλτιον τεθνάναι, θαυμαστόν ἴσως σοι φαίνεται, εἰ τοῦτοῖς τοῖς ἀνθρώποις μὴ ὁσιόν ἐστιν αὐτοὺς εὖ ποιεῖν, ἀλλ’ ἄλλον δεῖ περιμένειν εὐεργέτην*, 62, a. *It will, perhaps, appear strange if the question,*

to be or not to be, *lies, contrary to all analogy, in Necessary Matter, and not in Contingent*. [but analogy is against this supposition, and so the question, like all others, lies in Contingent Matter; therefore *not to be* is sometimes better than *to be*.] *If so, why not in these cases, commit suicide?*

‘Τοῦτο means the whole question at issue, the case *Life* against *Death*. That τοῦτο refers to the general question appears from the words immediately preceding, ἥδη γὰρ ἔγωγε (ὅπερ νῦν δὴ σὺ ἦρον), καὶ Φιλολάου ἤκουσα (ὅτε παρ’ ἡμῖν διητᾶτο), ἥδη δὲ καὶ ἄλλων τινῶν, ὡς οὐ δέοι τοῦτο [sc. τὸ αὐτὸν εἰναι ἀποκτινύναι] ποιεῖν· σαφές δὲ περὶ αὐτῶν οὐδενὸς πώποτε οὐδὲν ἀκήκοα: I got no precise views on *the subject* αὐτῶν, either from Philolaus or the rest. Socrates rejoins: ἀλλὰ προθυμείσθαι χρὴ, ἔφη· τάχα γὰρ ἂν καὶ ἀκούσαις, sc. περὶ αὐτῶν σαφές τι. Two passages fix the logical sense of ἀπλοῦν. Οὐ πάνυ μοι δοκεῖ, ἔφη, ὦ Σώκρατες, οὕτως ἀπλοῦν εἶναι,, ἀλλὰ τί μοι δοκεῖ ἐν αὐτῷ διάφορον εἶναι. *Prot.* 331 b. c. ἄρ’ οὖν ἀπλοῦν ἐστὶ λέγειν, ὅτι οἱ ἄνθρωποι τάχαθ’ ἔρωσι; *Ναί.* *Symp.* 206, a. ‘Απλοῦν, then, is any proposition without qualification as to either Quantity, and so Universal, or, as to Matter, and so Necessary. Οὐδέποτε τυγχάνει is merely the negative form of ἀπλοῦν, as the Greeks were fond of expressing a notion positively, and then negatively, as in γνωτὰ κοῦκ ἀγνωτά. I remember noting, with a *quære* in the margin of *Eulhydemus*, 278, a. that ἐστὶν ὅτε, and such forms, were used in preference to ἐνίοτε to denote the *minority* of instances, while the shorter form ἐνίοτε merely states that *there are cases*. At least, the fuller form must be more emphatic. I have not since verified the notion. But *Theæt.* 150, a. b. bears out my view, οὐ γὰρ πρόσσεστι γυναιξὶν ἐνίοτε μὲν εἰδῶλα τίττειν, ἐστὶ δ’ ὅτε ἀληθινά. Now, the philosophic births are few, 151, b.—*Essays on the Platonic Ethics*, pp. 94-95.’

This does no violence to τοῦτο; τοῦτο is always determined by the context: in fact, ταῦτα is used in the same paragraph of two heterogeneous things, sensibles, and ideas, 76 e. Professor Tyrrell suggests inserting ὃν with τυγχάνει; but the fact is, τυγχάνει without ὃν expresses greater fortuitousness than with it: τυγχάνω with ὃν ex-

presses coincidence of existences: *τυγχάνω* without *δν* expresses the incidence of a bare possibility.

69. a. b.

φρόνησις is the organ of reality: therefore the more *φρόνησις*, the more reality. This would be the modern view: but in Plato the *φρόνησις* is always at par, though the hindrances to its vision are not. Hence, we see better the more the hindrances are minimised. By *φρόνησις* then we get ideas; and the more ideas the more *φρόνησις* sees. Hence *φρόνησις* is the medium for getting ideas; and being of the same essence is an object of value *per se*, νόμισμα ὁρθόν 69 a. b. With due deference both to Principal Geddes and Mr. Archer-Hind, the simile is to be pressed in detail.

74. b. note 8, p. 56, Geddes.

"Φαίνεται," says Principal Geddes, "is more than *δοκεῖ seems*," p. 37. *Φαίνεται* is always the presentation to one or more senses. *Δοκεῖ* is the purely subjective fancy, or impression; hence, when Aristotle makes *ὁ δοκεῖ πᾶσιν* the test of reality, he is as empirical as Mill.

83. c.

Δι' ἐπιθυμίας is, beyond all doubt, appetite or lust: as to take the sensible for the intellectual is the unforgiven sin, as it impairs the intellectual vision:

ὁ πάντων μέγιστόν τε κακὸν καὶ ἔσχατόν ἐστι, τοῦτο πάσχει καὶ οὐ λογίζεται αὐτό. Τί τοῦτο, ὦ Σώκρατες; ἔφη ὁ Κέλβης. "Ὅτι ψυχὴ παντὸς ἀνθρώπου ἀναγκάζεται ἅμα τε ἡσθῆναι ἢ λυπηθῆναι σφόδρα ἐπὶ τῇ καὶ ἡγείσθαι, περὶ δ' αὖ μάλιστα τοῦτο πάσχει, τοῦτο ἐναργέστατόν τε εἶναι καὶ ἀληθέστατον, οὐχ οὕτως ἔχον. ταῦτα δὲ μάλιστα * τα * ὁρατά. ἢ οὐ; Πάνυ γε. Οὐκοῦν ἐν τούτῳ τῇ πάθει μάλιστα καταδεῖται ψυχὴ ὑπὸ σώματος;

83. c.

85. d.

λόγου θείου.

Much nonsense has been written on this. It has no reference to revelation or inspiration in the theological sense. Inspiration in the popular sense, as in a gleam of inspiration, or in a flash of inspiration, is somewhat near it. *Θεῖος* means that it is true, but not actually concatenated with other thoughts: cf. *Θεῖα μοίρα ἀνεν νοῦ*.—*Men.* 99. e.

99. e.—100. a.

If we look at the sun, we may hurt our eyes; so we examine its image on water: so I feared lest if I regarded sensible things I should get blind to the higher truth: I therefore resolved to examine truth in λόγοι: that is, you will say, the image, and not the reality: not so, for λόγοι involves the idea and the good as much as sensibles. The Platonic sin is to take the sensible for the intellectual, 83. c. cited supra. More briefly, if we looked at sensibles we might get Platonic blindness, i.e. mistake sensibles for realities, so I looked at λόγοι. Λόγοι are not εἰκόνες, but ὄντα.

T. MAGUIRE.

May 26, 1886.

STUDIA LYCOPHRONICA.

I. *Vocabulary of the 'Alexandra'.*

NO versifier is more guiltless of poetry and more devoid of all literary merit than the obscure and laborious Lykophron, but his *Alexandra* nevertheless possesses an interest, not only as an extreme example of Alexandrine literary tendencies, but also on account of its diction, which bristles with strange words. It is worth while to consider the question as to the sources 'from which Lykophron derived his unfamiliar vocabulary. Take, for example, *φώσσω*, 'a sail', a word probably used in Egypt. We are not to suppose that the Alexandrine professor strolled in the harbour to pick up out-of-the-way words for insertion in a grave tragic poem. We must surely look for a literary source; and the general impression we derive from the poem is, that the author ransacked the *tragedians* for rarities and packed them into his verses. We can see this most clearly in the compound words, some of which occur once or twice in tragedy (e.g. *μιξόθηρ*, l. 650, Eurip., *Ion*, 1161), while many are *ἄπαξ εἰρημένα*, but formed quite after the type of compounds used by the tragedians. If, then, Lykophron derived his words as well as his tone and metre from Attic tragedy, we must not suppose that he took such a word as *φώσσω* from the comedians (it occurs in Kratinos), but from some passage in a tragic drama which has not come down to us. The word *βᾶρις* is in point, a word current in Egypt, but used by Aeschylus and Euripides (*J. A.* 297). It was because they used it that Lykophron used it.

To go back a step; whence did the tragic poets derive the un-Attic and apparently vulgar or local words which they, especially Sophokles, sometimes used? From the lyric poets, most certainly, of whom they were the literary heirs; for as the choric part of a Greek tragedy inherited the traditions of Doric melic poetry (even the dialect in a modified form), so the iambic element had a direct literary connexion with Archilochos, Simonides the Elder, Hippônax, &c.; and some strange words used by Sophokles are such as we should expect to find in those writers, where no doubt he found them. It is possible therefore that Lykophron, knowing this, may have drawn on the original sources himself, and used words which occurred in the lyric poets, but did not happen to be employed by the tragedians. This possibility will also apply to the Homeric and Cyclic poems, which were used extensively in tragic drama.

To support these conclusions I give—(1) a selected list of rare words used by Lykophron, which we know to occur also once or twice in tragedy; (2) a selected list of rare words in Lykophron, which, not occurring as far as we know in tragedy, are found in—*a.* lyric poets, or *b.* Homer or Epic poetry. From these data, I think, we shall be justified in concluding that the residue of this author's vocabulary (both the words used by him alone and the words occurring also in other Alexandrine or in later writers) is derived from the same sources.

(1). Rare words common to Lykophron and the Attic tragedians.

θηλαμών, 31; Thespis (quoted by Clemens Alex. 675) = θηλάστρια, another uncommon word, used by Sophokles, fr. 85. ἡμάλαψε, 34; Soph. fr. 413. κέλωρ, 73, 495, 797; Eur. *Androm.* 1033 = *son.* σαλάμβη, 98; Soph. fr. 940 = *window.* δειννάσει, 404 (*cf.* δέννος 777); Soph. and Eur. κνώδων, 466, 1109, 1434; Soph. *Aj.* 1025, *Ant.* 1233.

στόνυξ, 486, 795; 1181; Eur. *Cyc.* 401. στόρθυξ, 492, 761, 865, 1406; Soph. fr. 110 = *spike*. κυνζούμενοι, 608; Soph. fr. 646, O. C. 1571 = *whimper*. στίρος, 670; Eur. *Androm.* 711. μῶλυσ, 679; Soph. fr. 620 = *sluggish*. Also in Hippônax, 60. πέμφιξ, 686; Aesch. fr., Soph. fr. φηλώσας, 785; Aesch. *Ag.* 492; Eur. *Supp.* 243. βᾶρις, 747; Aesch. and Eur. ὄρχατος, 857; Eur. *Incert.* 115. Occurs in *Iliad*. μερμίραν (βλάβην), 949; Eur. *Rhes.* 509. Epic word. εἵμαρις, 855; Aesch. *Pers.* 660, Eur. *Orest.* 1370. ἄρδις, 63, 914; Aesch. *Pr.* 880. γογγύλη, 981; Aesch. fr. 182. τημελοῦσα, 977; Eur. *I. A.* 731. λυγαίαν, 973; Soph. fr. 471, and Eurip. *bis*. θῆσσα, 997; Eur. *Alc.* 2, *El.* 204. σπιλάς, 1081; Soph. fr. 341, *Irach.* 678. παραιολίξει, 1094, 1380; Soph. fr. 815 (αἰολίζω) = *deguile*. δροίτη, 1108; Aesch. *ter.* δαρόν, 1144; the tragic form of δηρόν. δηναιόν, 876; Aesch. *Pr.* 912, 794. καλχαίνω, 1457; Soph. *Ant.* 20, Eur. *Hér.* 40. μυνδοῦ, 1375; Soph. fr. 914 = *dumb*. ὀθνείος, 1376; Eur. *Alk.* 532, 646, 810 (and Plato). ἐμφύρω, 1380; Aesch. fr. 29. σμίνθος, 1306; Aesch. fr. 212. τρόχιν, 1471; Aesch. *Pr.* 941. ἄρμοι, 106; Aesch. *Pr.* 615. κρεανύμος, 203, 762; Eur. *Cyc.* 245. στρόβιλος, 89, 506; Ion ap. Ath. 91, E. πύγαργος, 91; Soph. fr. 932 A. κάρβανος, 605; Aesch. *Ag.* 1061, *Supp.* 129, 914. πάλμυς, 691; Aesch. ap. Choeroboscum; occurs in Hippônax, 9. τυτθόν, 749; Aesch. *Ag.* 1606, *Pers.* 564, and Homer. κόπις, 763; Eur. *Hec.* 133. βαύζω, 1453; Aesch. *Ag.* 449, *Pers.* 13. κωτίλουσα, 1466; Soph. *Ant.* 756 (Hesiod, Theognis, &c.). γλήνη, 988; Soph. *O. T.* 1277, and Homer.

To these we may add—

έρμαίτης (πέτρος), 618: cf. Eurip. *Ino* 14, έρματίζονται. In Lykophron 1319, ήρματίξατο is from έρματίζομαι. νηρίταις, 238; νηριτοτρόφος, Aesch. fr. 379, γραικίτης, 605; the old word Γραικός was revived by Sophokles. δμπνιον (στάχυν; the same expression occurs in Apollonios Rhod. 4, 989), 621; Soph. fr. 233 (Hermann has introduced the word in

Aesch. *Ckoeph.* 671). *δμπνη* = *food* occurs in Kallimachos, and was used doubtless by early lyric or epic poets. L. and S. wrongly quote the passage of Lykophron under *δμπνη*. *αὐχενιστήρ* (*βρόχος*), 1100; Sophokles has *αὐχενίζω*, *Ag.* 298.

(2). Rare words common to Lykophron and—(a) early lyric poets; (b) Homer, Hesiod, etc.

(a) *ἔρπικς*, 579; Hippónax, 42, and Sappho, = *wine*. *βάβαξ*, 472; Archil. 29. *γίγαρτον*, 677; Simon, 91 (Aristoph. *Pax*, 634). *μύκλοις*, 771, 816; Archil. 172. *ἀσκέρας*, 855, 1322; Hippónax, 10. *κάλχη*, 864; Alkman, 30. *τουτάκις*, 891; Pindar, 4, 453; Theognis. *ραιβός*, 238, 262, 917; Archil. 52. *παμφαλώμενος*, 1433; Hippónax, 114, Anacr. 157. *κάρχαρος*, 34; Alkman, 132, *cf.* *καρχαρόδους*, Homer.

We may add—

βασσάρα, 771; Anacr. 54, *βασσαρίς* (*βασσάριον*, Hdtus. 4, 192). *καήηξ*, 425; *cf.* Hippónax, 5; Antimachos, 6. *στερφόπεπλος*, 652; Ibykos, 55, *στερφωτήρ στρατός*. *στέρφος*, 1347 = *hide*.

(b) *πλειῶνας*, 201; Hes. E. κ. H., 615 = *years*. *τόμουρε*, 223; var. for *θέμιστες* in *Od.* 16. 403. *ὠκριωμένος*, 545; *Od.* 18. 33. *ἴσκων*, 574; *Od.* 19. 203, etc., see L. and S. *σὺδ νοσε*. *ἀλθανοῦσιν*, 582; *Il.* 5. 417; 8. 405. *ἐλλόπων*, 598, 796; Homer. *τρύφος*, 607; *Od.* 4. 508. *τιθαιβώσσοντος*, 622; *Od.* 23. 106. *λαχήνη*, 623; *Od.* 24. 242 (*ἀμφελάχαινε*). *αὔλακας*, 623; Hes. *Op.* 437 (Pind. *Nem.*, 1. 29). *ἄκμηνος*, 672; *Il.* 19. 163. *μάστακος*, 687; *Od.* 4. 287 (Alkman, 136). *θλάσασα*, 689; *Il.* 5. 307. *βύκτης*, 738. 757; *Od.* 10, 20. *μεζέων*, 762; Hes. E. κ. H., 510; *cf.* Archil. 127. *σμάδιγγα*, 783; *Il.* 2. 267. *λοίγιος*, 795; *Il.* *βοάγριον*, 854; *Il.* *φορυκτούς*, 864; *Od.* 18. 336, *φορύξας*. *σμήχουσα*, 876; *Od.* 6. 226. *φιτροῦ*, 913; *Il.* and *Od.* *εὐράξ*, 920; *Il.* *φύξηλιν*, 943; *Il.* 17. 143. *δωτήνη*, 959; *Il.* and *Od.* *πίαρ*, 1060; Homer. *καταβλώξουσιν*, 1068; *Od.* 16. 466 (— *σκοντα*). *δύσζηλος*, 1117; *Od.* 7. 307. *ἀκοίτης*, 1123; *Il.* and *Od.*

γυρά, 1314; *Od.* 19. 246. ἀνηρείψαντο, 1283; Homer, νάκην, 1310; *Od.* 14. 530 (νάκος in Simonides and Pindar). μακεδνάς, 1273; *Od.* 7. 106. φρόνιν, 1456; *Od.* 4. 258. δασπλήτιδας, 1452; *Od.* 15. 234: cf. δασπλής, Simon. 46. μηρίνθου, 13; *Il.* 23. 854. κωδείας, 37; *Il.* 14. 499. κύμβαχος, 66; *Iliad.* δσπτούσας, 715, 164; Antimachos, 6. A favourite Alexandrine word. δσπρίμων, 94; Antimachos quoted by Photius, = *stable*. μαφαῦραι, 395; Hes. *Th.* 872.

I have not given anything like a complete enumeration: I have not even exhausted my own lists; but I have given a sufficiently large number of words to suggest that those words, used by Lykophron and his Alexandrine contemporaries, or by Lykophron alone, of whose occurrence in earlier literature we have no record, nevertheless did occur there; and therefore the principle of using Alexandrine words for emendation of the tragedians (adopted, *e. g.* by Hermann on Aesch. *Supp.* 793, where he introduces κύφελλα, a word common to Lykophron and Kallimachos) is a perfectly justifiable principle.

The residue of Lykophron's vocabulary may be divided into—(1) words also occurring in earlier prose or comic writers; (2) words confined to the Alexandrine poets; (3) words peculiar to himself. Of these the following are some examples:—

(1) φώσσων, 26 (εἰναφώσσων, 101); Kratinos, *Ωρ.* 4. πτίλα, 25; Herodotus, Aristophanes, etc. ὕσπληγγας, 22; Plato; Theokritos. σπήλυγγος, 46; Aristotle, = σπείος. ἐκβράσασα, 66, etc.; Hdtus. κέπφος, 76, 836; Aristophanes and Aristotle. φειάλω, 178; Aristoph.: cf. Archil. 113, φειαλύξ and Aesch. *Pr.* 363, φειαλόμαι. ποιφύξει 198 (and Euphorion 95); Sophron ap. Ath. 324 E. λαφυστιαίς, 215, 791, 1234; Hdtus. 7. 197. κρηθμοῖσι, 238; Hippok. = *samphire*. ληθάργω, 241; Hippok.

(2) τυλίσσων, 10; Theokr. 23. 54 (var.) οὔσα, 20; Alexander of Aetolia, fr. ap. Parthenium, l. 15, οὔσου = *rope*.

(Perhaps Latin *ora* in sense of hawser should be separated from *ora* = 'shore,' and be connected with οὔσον). δωμήσατο, 48; Ap. Rhod. 2. 531. δύντου, 73; Kallin. fr. 167; cf. δύντω, βύνη, 107; Euphorion, 90 = *sea* (old name of Ino). σκαρθμός, 101; Ap. Rhod. 3. 1260; Aratos, 281. ἀφάσων, 114; Ap. Rhod. 2. 710. λίπτοντα, 131; Ap. Rhod. 4. 813. λίπτομαι in Aeschylus. ὀλκαίων, 216; Ap. Rhod. 1. 1314. (ὀλκαία = *tail* Ap. R. 4. 1614). χάρων, 455; Euphor. 47 = *lion*. But 260 of the eagle, and 660 of Kyklops. δομήν, 334, 597, 783 = *δέμας*. Ap. R. 4. 1237. δάνος, 710, etc.; Euphor. 89 = *gift*; Kallim. Ep. 50 = *debt*.

(3) γρώνος, 20, 631, 1280: cf. γρώνη in Nicander; and γράω Kallim. fr. 200. φλοιδούμενος. 35. In Byzantine writers and perhaps Hippokrates. τινθός, 36: cf. Aristoph. *Vesp.* 329, διατινθαλέος. σμήριγγας, 37 = *bristles*, cf. Hesych. μῆριγξ. λοφνίσιν, 48. Also in Anthology. λοφνίς = *torch of vine bark*. ἡγκιστρωμένος, 67. Also in Plutarch. πορκέες, 237, 596, 1217 = one who fishes with a πόρκος, a *net*, a word which occurs in Plato and comic poets. πορκός, 74. ὅποια πορκός Ἰστριεὺς τετρασκελῆς. schol. ζῷον ἐστὶ παρὰ τὸν Ἰστρου ποταμόν, κ. τ. λ. Kinkel's edition gives πορκός in the text, but πόρκος in scholia. Not in L. and S. φάλλη, 84, 394 = *whale*. γρυνός, 86, 294 = *faggoi*. τόργος, 357. 1080 = *vulture*; 88, ὑγρόφοιτος = *swan*. κελύφανον, 89 = *κέλυφος*, *shell*, also in Lucian. τράμπις, 97, 1299 = *ship*. Also in Nikandros. To make a daring conjecture—could this be a Sicilian pronunciation of *trabs*, which had found its way into Lykophron? It would then be an early instance of the modern Greek μπ = *b*. κύνουρα, 99 = *seacliffs*. σιφνέες, 121 = *mole*. κάσσα, 131 = *strumpet*. ἀλοιτός, 136 = *ἀλειτής*. ἀλοιτής is quoted fr. Empedokles. ἀνακυπώ, 137 = *overturn*. In Nikandros. ἄμναμος, 144, etc. = *son, descendant*. This strange word is a favourite with Lykophron. It is supposed to be for ἄβναμος, and connected with *agnus*, ἀμνός, but this seems very doubtful. φάρω, 154, probably

restored from Et. Mag. = *throat*. τόρμα, 262. 487, = *turning-post*. ἀγάστωρ, 264, *not akin*. ψυδρός, 235, 1219 = ψευδής. ἄλμα, 319 = ἄλσος. κυπᾶς, 333 = κυπασσίς. φαιουρός, 334 = *grey-tailed*: cf. λαμπουρός. μνιόν, 398, = *moss*, cf. μνιόεις, Ap. R., and μνιός in Euphor. 137 = ἀπαλός. κορωτή, 291, *shorn*.

I have selected the words given in the last three lists from the first few hundred lines; and they are sufficient to convey an idea of the nature of Lykophron's vocabulary. It remains to say a word about his compound words. Many of them occur nowhere else in extant literature; but many others occur once or twice in tragedy. For example, ἀθελκτος (1335) occurs once in Aeschylus; ἄκλυστος (736), once in Euripides; αἰνόμελετρος (820. 1354), once in Aeschylus; ἀγχιτέρμων (1130. 729), in Soph. p. 349, and in the *Rhēsos*; ἀθαμβής (558), in Phrynichos, and in the lyricist Ibykos. Instances of ἄπαξ εἰρημένα are ἀβροπήνους (863), formed like ἀβρόπλουτος, ἀβροδίαιτος, ἀβροχίτων, a word which probably occurred in tragedy, and has been introduced by Salmasius in the *Agamemnon*, 690; ἀγήλατος (436), cf. ἀγηλατέω in Sophokles; ἀγχιπους (318); ἀθεσμέλετρος (1143), cf. ἀθεσμβιος in Hippokrates; αἰθυιόθρεπτος (237); αἰνοβάκχευτος (792); αἰστωτήριος (71). We have ἀκεστής (1052) beside ἀκεστήρ, Soph. *O. C.* 714; κράντης (305), cf. Eur. *And.* 508, κράντωρ.

We must also notice peculiar dialectical forms used by Lykophron. L. 21, ἐσχάζσαν = ἐσχαζον; l. 252, πέφρικαν = πεφρίκασι. On the latter we find the scholion:—ἔστι δὲ ἡ λέξις Χαλκιδέων καὶ Ἑρετριέων, οἱ αὐτοὶ καὶ τὸ ἐσχάζσαν καὶ ἤλθοσαν ποιοῦσι.

The fact that Lykophron was a native of Chalkis makes us at first suspect that he designedly introduced these provincialisms as a novelty; nevertheless this is unlikely. It seems to me certain that he must have had some literary authority for them; and this authority may have been Pin-

dar or the tragic poets. The proximity of Euboia to Athens makes it easily conceivable that a tragedian, naturally familiar with the Chalkidian or Eretrian dialects, might introduce such forms in a drama concerned with Euboia. The scholion itself seems to me very important, for Herodian and Choitroboskos say that these forms in *-σαν* are Bœotian (e. g. *ἐδουλιούσαν, ἐμάθοσαν*); and certainly *ἐνίκωσαν* is a Bœotian form for *ἐνίκων*.¹ According to Herakleides and Phavorinos, they are Hellenistic (cf. Hellenistic optat. terminations, *-αῖσαν, -ουσάν*). These differing statements do not conflict. There is no difficulty in supposing that these forms in *-σαν* were used in the dialect of Chalkis and Eretria, as well as in that of Bœotia. They survived in literary Hellenistic Greek, of which the non-Attic portion must be traced generally to two sources—(1) other Greek dialects; (2) analogy. We see the beginnings of its formation in—(1) Xenophon, and (2) Aristotle. Xenophon is full of non-Attic words used in other parts of Greece; and Aristotle uses widely the process of formation by analogy, so convenient for concise philosophical expression (compare such words as *φιλοστοιούτος*). From 350–250, we may say, the Hellenistic language was forming; and the Alexandrine school had much to do with its formation. Writers, no longer careful of a pure Attic style, and only anxious to express their thoughts intelligibly, would make use of provincial words and forms, and thereby introduce them in literature; and they might also become current by use in a professor's oral lectures. Lykophron of Chalkis, for example, might have set the example of using these forms in *-σαν* at Alexandria; but I should conjecture that they may have been used in the writings of Menedêmos of Eretria, who flourished in the latter half of the fourth cen-

¹ Also *ἐπῆλθοσαν* and *διελάβοσαν* in Bœot. inscriptions of the Hellenistic period.

tury. It should be noted that the LXX., translated in the third century, has the form ἤλθοσαν.

But for ἐσχάζοσαν and πέφρικαν in the *Alexandra*, I believe Lykophron must have had some authority in the tragic or lyric poets.

Finally we may notice that, like modern Greek verse writers, Lykophron had a special love for several words which are only once or twice found in the tragedians; e. g. νασμός, σχάζω, κέλωρ, στόννξ, στόρθυγξ, κλιτός; also for δάνος, δωμάω, ἐκβράζω, ἔλλοψ, ρόχθος, ἄμμαμος, etc.

II. Notes on the 'Scholia Vetera.'

The *Scholia* cannot be earlier than the sixth century, for they contain instances of the later usages of ἐν for εἰς and εἰς for ἐν (e. g., l. 996, ἦλθεν ἐν Ἰταλίᾳ; l. 1217, εἰς ἀλιευτικὸν σκάφος ἔπλει), usages which begin to appear in literature in Menander Protector and Agathias. In Agathias there are three instances of ἐν for εἰς.

Mistakes abound in these *Scholia*, but can easily be corrected. For example, on l. 447, ὅλη γὰρ ἐστι περὶ τὸν Κούριον τόπον τοῦ Κύπρου ἱερὰ Ἀπόλλωνος, κ. τ. λ., where for τοῦ read τῆς.

L. 492-3—

τῶν πρόσθε μῆνης φηγίνων πύργων ὀχὴν
σπληδῶ κατ' ἄκρον χεῖμα θαλψάντων πυρός.

Schol. πρόσθε δὲ μῆνης, διὰ τὸ πρὸς Ἑλλήνας εἶναι τοὺς Ἀρκάδας. Read διὰ τὸ προσελήνους, κ. τ. λ.

L. 524, *Schol.* εἰ στρατεύσειαν οἱ περὶ τὸν Ἰδαν οὐκ ἀνθίσονται αὐτῶν τὰς χεῖρας τὰ τείχη οὐδὲ πρὸς μίαν ἡμέραν. Read ἀνέξονται.

L. 527, *Schol.* δυσμενῶν δὲ μοχλόν, ἀντὶ τοῦ ἀσφάλειαν ἀπὸ τῶν δύο μερῶν τὸν Ἑκτορα ἔχοντα. Read δυσμενῶν.

L. 522 *sq.*, *Schol.* relates a dispute between Daunos and Diomêdes, and how Alainos decided it in favour of Daunos. ἐφ' ᾧ Διομήδης ὀργισθεὶς τρία καταράσατο, μηδένα δύνασθαι σπείρειν τὴν γῆν εἰ μὴ τινα ἀπὸ τοῦ γένους ὄντα, κ. τ. λ. There is no question of three curses; only one is mentioned. Read κρίσει.

L. 874. οὐδὲ ὄμβρος δύναται καθάραι. Read καθῆραι.

III. Notes on the Text.

L. 1435 *sq.*—

πολλοὶ δ' ἀγῶνες καὶ φόνοι μεταίχμιοι
 λύσουσιν ἀνδρῶν οἱ μὲν ἐν γαίᾳ πάλας
 δειναῖσιν ἀρχαῖς ἀμφιδηριωμένων,
 οἱ δ' ἐν μεταφρένοισι βουστρόφοις χθονός.

ἐν γαίᾳ is corrupt, as the sense requires 'by sea,' in opp. to l. 1438, 'by land.' In the *Scholía* we find an impossible reading recorded, γράφεται καὶ πέλας γαίης. Scheer gives ναυσὶν for γαίᾳ. I had thought of ἐναλίας πάλας, but Dr. Maguire has communicated to me two better suggestions, ἐν ζάλῃ or ἐν ναρᾷ (*cf.* ὑγρὴν in Homer).

L. 93—

ὥς πρόσθε κάλλους τὸν θυωρίτην τριπλαῖς,

referring to the judgment of Paris, is a very difficult line. θυωρός occurs in Kallimachos' hymn to Artemis in sense of a festive table (*sc.* τράπεζα). *Cf.* Diog. La. i. 119. θυωρίτης would be one who ministers, or one who is a partaker at such a table. We might then translate, 'As him who in former days entertained the three goddesses at a feast of beauty.' τριπλαῖς seems hardly defensible without θεαῖς; and as the article is certainly not wanted, Hermann read

θιαῖς for τόν. L. & S. translate 'an examiner of beauty'; but how are we to arrive at this meaning? The scholiast arrives at it by a curious way, not hinted at by L. & S. :—

θυωρίτην τὸν τραπεζίτην, ἀργυρογνώμονα, κρίτην Ἦρας καὶ κ.τ.λ. θυωρὸς δὲ κυρίως ἢ τράπεζα παρὰ τὸ τὰ θύη δεχέσθαι ἢ τὰ θύη δεχομένη τῶν θεῶν· νῦν δὲ μεταφορικῶς εἶπεν· ἢ παρὰ τὸ τὰ θύη φυλάττειν. καὶ θυωρίτης ὁ τραπεζίτης.

Yet I think we can hardly accept this explanation. For we have no evidence that θυωρὸς was equivalent to τράπεζα in the sense of bank; and such a meaning is most highly improbable.

I am inclined to read τριπλοῦ, supposing τριπλαῖς to have crept in from a gloss τριπλαῖς θιαῖς, and to translate θυωρίτην, 'entertainer' of the (triple beauty =) three beautiful ones. This, I think, is supported by ξενώσεται in the preceding line, to which it thus forms a contrast.

L. 360 (*cf.* 400), τάρροθος = ἐπιτάρροθος. This form seems to put quite out of the question the usually given, but unsatisfactory connexion of ἐπιτάρροθος with ἐπίρροθος. Dr. Maguire has suggested to connect τάρροθος with O. Ir. *tair*, come, do, and *im-thirid*, ministravit (*cf.* ἀμφίπολος).

L. 682, νεκρόμαντιν πέμπελον, and 826, πέμπελον γραῦν, have nothing to do, either in form or meaning, with δυσπέμφελος, as suggested in L. & S. πέμπελος (*old*) is more probably akin to παλαιός, πάλαι, and formed like παμφαίνω or δεινδύλλω. δυσπέμφελος (= *rough, stormy*) may be in the same way related to ἀφελής (*smooth*), which is by some derived from φελλεύς.

L. 1225, *sqq.* The genuineness of these lines, in which Cassandra predicts the fortunes of Aineias' descendants, has been questioned on the ground that Lykophron, who flourished between 280 and 250 B.C., could not have spoken of Rome in the terms which he uses :—

γένους δὲ πάππων τῶν ἐμῶν αὐθις κλέος
 μέγιστον αὐξήσουσιν ἄμναμοί ποτε,
 αἰχμαῖς τὸ πρῶτόλειον ἄραντες στέφος,
 γῆς καὶ θαλάσσης σκῆπτρα καὶ μοναρχίαν
 λαβόντες.

The scholiast on this line attributes the poem to another Lycophron, not the tragedian. Clinton, however, maintains that the lines may have been written by the poet of Chalkis, and I think rightly. 'Lycophron seems to have completed the *Alexandra*, not only after the treaty of the Romans with Philadelphus in B. C. 273, but after the first naval victories of the Romans.' This will explain *θαλάσσης μοναρχία*. But it was the successes gained over Pyrrhus and the failure of his expedition that must have brought the Roman power especially under the notice of the Alexandrine poet. We must also remember that an exaggerated description of the success of Trojan posterity would be quite in character in the mouth of the Trojan prophetess.

L. 1244, *νάνος*, used of Odysseus, and interpreted in the *Scholia*: ὁ Ὀδυσσεὺς παρὰ τοῖς Τυρσηνοῖς νάνος καλεῖται δηλοῦντος τοῦ ὀνόματος τὸν πλανήτην. This reference and meaning are omitted in L. & S.

J. B. BURY.

Reviews of Books.

BLAYDES'S TEXT OF ARISTOPHANES.—Aristophanis Comici quae supersunt opera, recensuit Fredericus H. M. Blaydes, 1886.

THESE are a pair of handsome volumes, of great importance and value, edited by one who can most properly claim to be the truest living representative of the good old school of Greek criticism: the school of Bentley and Porson; of Elmsley, Dobree, and Gaisford. The first volume contains the eleven plays, with a preface and addenda, containing some of the newest work on Aristophanes: the second an elaborate edition of the Fragments, with an index and a collation with the numeration of Dindorf and Kock. Having recently expressed my opinion of the great merit of Mr. Blaydes's most original and disinterested labours on Aristophanes, I cannot do more at present than merely call the attention of the reader to a few of his more important individual restorations. The first volume indeed would give but a very inadequate idea of what he has done for Aristophanes: to appreciate this fully, his elaborate editions of the separate plays, which have all appeared except the *Plutus*, must be consulted: of these the *Acharnians*, which Mr. Blaydes selected some forty years ago for his second essay in criticism, is to reappear in the same shape as the rest; and the four plays, the *Equites*, *Nubes*, *Ranae*, and *Vespae*,

which have appeared in one volume, with a critical apparatus, may be expected to appear separately with a Commentary added. It is to this series the volume containing the Fragments properly belongs. In the *Acharnians* at vs. 231 :

κούκ ἀνήσω πρὶν ἂν σχοῖνος αὐτοῖσιν ἀντεμπαγῶ
ὀξὺς ὀδυνηρὸς . . . ἐπὶ κωπος ἵνα
μήποτε πατῶσω ἔτι τὰς ἐμὰς ἀμπέλους.

Mr. Blaydes's ἀνιαρὸς, proposed by him in 1845, fits in like a piece of a dissecting-map. At 1062,

οὐκ ἐστὶ γυνή 'στι τοῦ πολέμου τ' οὐκ ἄξία,

Mr. Blaydes has the satisfaction of having anticipated Cobet by many years in writing αἰτία. So long ago as 1845 Mr. Blaydes expressed his opinion that in the difficult line, 1093,

ὀρχηστρίδες, τὰ φίλταθ' Ἀρμοδίου, καλαί

there was an allusion to the well-known scolium : and he wrote

ὀρχηστρίδες, τὸ Φίλταθ' Ἀρμόδι' ᾄδεται.

But it may be doubted whether this or any of the proposed cures of a manifestly corrupt line are quite satisfactory. Mr. Blaydes now retains the MS. reading in his text. In *Nubes*, 744 :

κἄτα τὴν γνώμην πάλιν
κίνησον αὐτὸς αὐτὸ καὶ ζυγώθρισον,

by simply writing τε for καὶ Mr. Blaydes heals the blemish. In 1312 of the same play ἐδίζητ' for ἐπεζήτη is admirable ; and, far from the MSS. though it is removed, it is difficult to resist the force of illustration in support of προβαλεῖ in Vesp. 21 : ΞΑ. Πῶς δῆ ; ΣΩ. Προβαλεῖ τις τοῖσι συμπόταις λέγων, where the MSS. give πρυσσερεῖ. Such conjectures as these and many others, *e. g.* those on Av. 1011. *seqq.* 1282,

1671, show Mr. Blaydes at his best. There are indeed passages where I think he has changed the reading unnecessarily; but I quite admit the large probability that his judgment is right and mine wrong. I take this opportunity of thanking him for the extremely high honour he has done me by dedicating his work to me, an honour which I feel is much beyond my deserts.

I regret that Mr. Blaydes does not see his way to accepting my conjecture *θειον* for *σειον* in *Pax* 960. Quite true, as Mr. Blaydes says, it would be difficult to show that sulphur was used at lustrations before sacrifices; but *θειον* does not imply the use of actual sulphur. It meant originally, no doubt, to purify with sulphur; but in ordinary use retained only the general sense of to hallow, as in *Eur. Hel.* 865. A dipping of a myrtle branch in holy water, and sprinkling around the altar would be a *θειωσις*, and there are several references to such acts of consecration in our author, as *Thesm.* 27.

At a future time I hope to say something of the volume containing the Fragments. But at present I must conclude by sincerely wishing Mr. Blaydes health and success in finishing what remains to crown his work.

LEO'S PLAUTUS.—T. Macci Plauti Comoediae, Recognovit Fridericus Leo. Vol. I. Amphitruonem, Asinariam, Aululariam, Bacchides continens.

THIS edition, when completed, will, if it proceeds as it has begun, be a very valuable text of Plautus. It is founded on the editions of Ussing and Loewe-Goetz, and its merit consists in the plan it follows, in the discrimination exhibited in the choice of emendations, and in several excellent original conjectures. The editor does not aim at repro-

ducing the plays exactly as Plautus, or his editors of the second century before Christ, wrote them. He is satisfied, in some cases, if he can restore the recension to which our MSS. point—a recension which may belong to the age of Hadrian. Thus, although Leo denies that Plautus admitted hiatus in the ordinary sense of the word, he does not remove it in his text, believing that it was admitted by careless or ignorant transcribers of the Hadrianic age. He is content to indicate in his note the most probable method by which the hiatus may be removed, whether by the addition of *-d* to the ablative, by writing *hodie hocedie*, by the insertion of *ego, iam*, or some small word which may have dropped out unnoticed because its omission left the sense untouched. Although I disagree with Leo as to the main question, I think this is a sensible plan, for it leaves the question, as it should be left in many cases, an open one; first, between hiatus and no hiatus; secondly, supposing no hiatus to be the true theory, between several equally balanced methods of removing it.

Leo has adopted many of the best emendations of late editors and critics. I am glad to see, *Asin.* 395, Ussing's *conveni, sed* for *convenisset*; and *Asin.* 661, Seyffert's *pressatum umerum* for *pressatum erum*, taking their proper places in the text. I am surprised that Loewe-Goetz's *nunc cuculo*, *Asin.* 908, is not accepted: it seems to me certain. Of the editor's own emendations, by far the best is the following: *Aul.* 693:

Em, mater mea,

Tibi rem potiolem *verbo*: clamat, parturit,

where the MSS. give *video*; and *Asin.* 372, *Mox quom in Sauream mutabor cave tu ne succenseas*, where the MSS. give *imitabor*. These, especially the former, are quite beautiful. In some instances he is not so successful: for instance, in the beginning of the prologue of the *Aulularia*, his 'Patri [*favi*] avoque iam huius qui nunc hic habet'

seems to me very bad. Sometimes, too, he is not so careful as he should be in acknowledging the first author of the emendation he adopts: for instance, he puts forward as his own my emendation of *Amph.* 207, although the conjecture is assigned to me in Goetz's Preface. In *Asin.* 331, I wrote, and I believe wrote rightly, 'mitto: *istuc*, *istuc* quod adfers aures expectant meae': compare the common iteration ἐκείν' ἐκείνο. Leo spoils this by writing 'mitto *istaec*: *istuc* quod adfers': which, I submit, is late Latin. That Leo has not exhausted the mine of emendation may be seen by the following list of conjectures which have occurred to me while carefully reading the *Amphitruo* and *Asinaria* with the help of his edition:—

Amphitruo, 1. 1. 22 [176].

MERC. Satiust me queri illo modo servitatem :
 Hodie qui fuerim liber eum nunc
 Potivit pater servitutis
 Hic qui verna natust queritur.

It seems to me that three bacchii are wanted in the last line: I write:

Hic qui verna natust QUIRITAT.

queritur was caused by *queri* above. It is strange that *quiritare*, found in Lucilius, Cicero's Correspondence, Livy, Apuleius, etc., does not occur in Plautus. It seems just the word wanted.

Amph. 1. 1. 147 [303].

Agite, pugni, iam diust quom ventri victum non datis :
 Iam pridem videtur factum, heri quod homines quattuor
 In soporem collocastis nudos. Sos. Formido male,
 Ne ego hic nomen meum commutem et Quintus fiam e Sosia ;
 Quattuor † duos sopori se dedisse hic autumat :
 Metuo ne numerum augeam illum.

For *duros* Leo reads *nudos*, which is an improvement on the ordinary reading, *viros*. But I beg leave to suggest the true reading is much nearer the MSS. It is *duro sopori*, the hard bed of death. Cf. Virgil, *Aen.* 10. 745: *Olli dura quies oculos et ferreus urget Somnus*. The metaphor of slang is often very near the metaphor of epic poetry.

Amph. 2. 2. 98 [727].

Sos. Atrabili percitast.

Nulla res tam delirantis homines concinnat cito.

AMPH. Ubi primum tibi sensisti, mulier, impliciscier?

What construction has the last line? Read:

Ubi primum *te ibi* sensisti mulier impliciscier?

Ibi scil. *morbo atrae bilis*. For *implicari*, said of a diseased person: cf. *Mart.* 1. 101. 6: *Ureret implicitum cum scelęrata lues*. *Lucr.* 6. 1232, with Munro's note.

Amph. 3. 2. 101 [891].

JUPP. Faciundumst mi illud, fieri quod illaec postulat,
Si me illam amantem ad sese studeam recipere.

Alcumena is distracted by the suspicions of her husband—*amentem* is clearly right for *amantem*. Jupiter says he must try and bring the distracted creature back to her senses (*ad sese*). A careless interpretation of the last words as referring to Amphitruo probably led to the weak corruption *amantem*.

Amph. 3. 3. 9 [964].

Sos. An id joco dixisti? equidem serio ac vero ratus.

Read:

An id joco *dixti*? equidem *dictum* serio ac vero ratus,

or *dixe*.

Amph. 3. 3. 21 [976].

Nunc tu divine huc fac adsis, Sosia.

Read, evidently :

Nunc tu, *tu* divine huc fac adsis Sosia.

Amph. 5. 1. 10 [1062].

Streptus, crepitus, sonitus, tonitrus : ut subito, propere, ut valide tonuit.

Tonare subito is a natural expression : *tonare propere* is strange. *Propere* is clearly, in my opinion, a mistake for *prope*. We shall give a good anapæstic octonarius by writing—

Streptus, crepitus, sonitus, tonitrus : ut subito, *prope*, valide, tonuit !

‘How sudden, how close, how loud, was the thunder-clap !’

Asin. 1. 2. 16. [142].

Sordido vitam oblectabas pane, in pannis, inopia.

Atque ea si erant magnam habebas omnibus dis gratiam.

Inopia is not coordinate with *in pannis* ; nor can a person be said to enjoy himself on poverty ; nor, again, can a person be said to be grateful to the gods for having *even* poverty, though he or she may be grateful for even mouldy bread and rags. Read *inpia*, vocative.

I add a few conjectures in the comparatively unexplored thickets of the *Casina* and *Cistellaria*.

Casina 2. 6. 65 [313].

CL. Victus es Chaline. Sr. Tum nos diu vivere, Olympio, Gaudeo. Pietate factumst mea atque majorum meam.

Spengel gives *dico vivere* ; Geppert *hodie vincere*, neg-

lecting to inform us that *vivere*, not *vincere*, is the MS. reading. It is clear the true reading is:—

CL. Victus es Chaline. ST. Tum nos DI IVVERE, Olympio!¹
OL. Gaudeo! ST. Pietate, etc.

Casina 3. 5. 49 [576].

PA. Ego húc missa súm ludere. ST. Heús Pardalísca!
PA. Quid ést! ST. St! PA. Quid? ST. Ést, quod volo éx-
quirere éx te
PA. Moram óffers mihi.

‘St!’ ‘hush,’ is quite out of place here. The true reading is clearly *sta!* ‘stop’: cf. *Pers.* 2. 4. 3.

Casina 5. 4. 16 [824].

ST. Tui amoris causa ego istuc feci. CL. Immo Hector illius
Te quidem oppressisset. ST. Feci ego istaec, dicta quae vos
dicitis?

Hector illius B; *ecastor ilius* A. Each is partly right;
read *Hector Ilius*. In the next line read *oppressit* for *oppres-*
sisset, and *facta* for *dicta*.

ST. Tui amoris causa ego istuc feci. CL. Immo Hector Ilius
Te quidem oppressit. ST. Feci ego istaec, facta quae vos
dicitis?

‘I did it all for the love of you,’ says the husband. To
this monstrous statement Cleostrata replies by suggesting
an excuse palpably, but not more, untrue—‘Nay, Hector
of Troy forced you!’ For a similar absurdity compare
Merc. 2. 4. 20, where Charinus, being at a loss where to
get money, says: *Achillem orabo aurum ut mihi det, Hector*

¹ This emendation I now find antici-
pated by Ussing. I take the oppor-
tunity of resigning to C. F. W. Mueller

my emendation of *Men.* 223, proposed
in last HERMATHENA. See his *Nach-*
trag, p. 97.

qui expensus fuit. For *facta* cf. 3. 5. 47, supra, *quae facta dixi.*

Before leaving the play I suggest that 2. 8. 18 should be written

Quid? 'deosculer'? Quae 'res'? quae 'voluptas'? quae 'tua'?

that by writing *modio* for *modius* in 3. 2. 8, against the MSS., the sense is spoilt; and that *patrice gamiceque* underlies the *patriceque amiceque* of the MSS. 3. 6. 4.

Cistellaria 1. 1. 72.

Namque ecastor amor et melle et felle est fecundissimus:
Gustu qui dat dulce, amarum ad satietatem usque oggerit.

I propose *quid* for *qui*. 'Love gives something sweet to the taste, and as for bitterness, he fills your cup with it to satiety.'

Cistellaria 1. 1. 61.

Mea excrucior, mea Gymnasium, male mihi est, male maceror.

I make this an Iambic octonarius, and write—

Mea *lux*, excrucior, mea Gymnasium, male mihist, male maceror.

Cf. supra, *Meus oculus*, *mea Silenium*.

Curculio 2. 3. 9 [288].

Tum isti Graeci palliati capite operto qui ambulant,
Qui incedunt suffarinati cum libris cum sportulis,
Constant conserunt sermones inter sese drapetae:
Obstant, obsistunt, in cedunt cum suis sententiis:
Quos semper videas bibentes esse in Thermopolio:
Ubi quid subrupuere operto capitulo calidum bibunt,
Tristes atque ebrioli incedunt, eos ego nunc si offendero
Ex unoquoque eorum excutiam crepitum polentarium.

Bibentes esse is strange Latin, and the fifth verse is enclosed in brackets by Ussing. I rather agree with Goetz,

who brackets the sixth verse. He gives *libentes esse* with E. I suggest to keep *bibentes* of B, and to read :—

Quos semper videas bibentes *asse* in thermopolio.

You may see these poverty-stricken philosophers drinking in the taverns at the cheapest rate. Cf. Varro, *Sat. Men.* p. 171, Riese: *asse vinum, asse pulmentarium* Lucil. 5. 30 (Müll.) *asse duas ficos*. Mart. 9. 60. 22: *Asse duos calices*. Id. 1. 104. 9: *Et Veientani bibitur faex crassa rubelli*; *Asse cicer tepidum constat et asse Venus*.

ARTHUR PALMER.

FRAGMENTA HERCULANENSIA: A descriptive catalogue of the Oxford copies of the Herculanean Rolls, together with the texts of several papyri, accompanied by facsimiles; edited, with Introduction and Notes, by Walter Scott, M.A., Fellow of Merton College, Oxford, at the Clarendon Press, 1885.

A WORK on such a recondite and troublesome subject as the reading and elucidation of the Herculanean Fragments (as far as they have been opened²) would be nothing if not complete and thorough-going. Such a work, if any, should be done once and for all. To a description and history of the papyri and of the copies made from them, with criticisms on the value of their treatment by previous editors, should be added plates giving the exact appearance of the originals, in order that the palaeographer and student of philosophy may see the value of the several attempted emendations of the frag-

² There are in England eight Rolls at Windsor, and four in the British Museum (p. 8). still unopened: three at Oxford, one

mentary remains; and even where nothing approaching towards a connected sentence, but only isolated words or parts of words, or even scattered letters, are found, these must be presented, as they might help to elucidate subsequent discoveries; and, lastly, a commentary explaining the fragments as far as possible must be added. All these *desiderata* we find supplied with the most masterly thoroughness³ and accuracy, and in the most convenient form for use by Prof. Scott. He has done the work once for all, and systematised the materials at present available for students who interest themselves in Greek palaeography or in the Epicurean philosophy: and such students will, I feel sure, show their gratitude by hearty and unqualified praise of Prof. Scott's work. Externally the book is quite splendid; indeed I do not remember to have seen any book produced by the Clarendon Press at Oxford of such unaffected beauty and elegance.

If for no other reason, Prof. Scott's work was wanted owing to the many instances in which Zeller was misled by the carelessness and imaginativeness of the Naples editor, Scotti, who was not Epicurean enough to forbear attempting to produce something out of nothing. To take a striking example: in *Pap.* 152, col. 13, l. 20, 21, the reading, as Scotti deciphered it, was νοητέον δὲ κατὰ τὸν Ἑρμαρχον καὶ Π. Ε ΝΟΟ (these letters barely formed). ΑΚΙ ΕΜΕΝΟVC τοὺς θεοὺς, which he elaborated into νοητέον δὲ κατὰ τὸν Ἑρμαρχον καὶ Πυθοκλῆ τὰ κλίσια καὶ περιθεμένους τοὺς θεοὺς. Zeller says (*Stoics*, &c., p. 468, note, Eng. trans., ed. 2) 'the κλίσια discussed by Hermarchus and Pythocles, cols. 13. 20, had reference to these (*sc.* dwellings of the gods), and not to ordinary feasts.' 'Thus,' says Prof. Scott justly, 'tabernacles for the gods have been evolved out of an original A.' Other examples of Zeller's being

³ There is just one drawback, in that there is no index.

misled by Scotti are to be found on pp. 181 and 185 of Prof. Scott's work, and amusing instances of the Naples Editor's absurd imaginative pedantry may be seen in pp. 186, 188, 191, 195, 250. However, Scotti must get his praise for the excellent emendation *ῥυμβονώμενος* on *Pap.* 152, col. 10, l. 10, *ὁ(ν γὰρ) εὐτυχῆς ὁ (ῥυ)μβονώμ(εν)ος ἀπαν(τα) τὸν βίον*, though he reads the latter words as *ἀπαναριστήτως*; but, surely, that an Epicurean god could not be happy if whirled round without his breakfast would be too much of a truism for Philodemus to insist upon!

The value to the palaeographer of Prof. Scott's work is great. The Oxford facsimiles of the two important rolls (157-152, and 26) are given almost entire, and remarks on the peculiarities of the writing, chiefly contractions, on pp. 98, 229: also facsimiles of Philodemus *περὶ θανάτου*, and of a Latin Hexameter poem⁴ on the war of Augustus against Antony are presented in an appendix. Prof. Scott has interesting notices (p. 14) of stichometric marks which occur on these rolls. Indeed the whole introduction telling of the history of the rolls is well worth reading; and the reasoning that the whole collection probably formed part of the library of Philodemus in the first instance, and afterwards passed into the house at Herculaneum of his patron, L. Calpurnius Piso Caesoninus, seems clever and convincing.

Philosophically, the most interesting point in Prof. Scott's book is the theory (in part due to Lachelier) derived from Cic. N. D. I. 49 (cf. § 105, 109), and the Herc. Frag. on the perpetual change of the material of the Epicurean gods. The gods do not remain for the smallest moment of time the same (*Pap.* 157-152, col. 10, 11), but the *arrangement* of the various atoms always continues the same, and so the mental state does not lose its personality;

⁴ For the history, and a probable conjecture as to its author, see pp. 51, 52.

and Philodemus does not forget to compare the personal identity of an individual persisting through complete changes of the bodily organism (*Pap.* 26, col. 7-9). Other discussions such as on the relations of the stars to the gods (152, col. 8, l. 38 to col. 9, l. 13), on the breathing and speaking of the gods (col. 13, 14), and on the Epicurean reply of inconsistency to the Stoics, who held in the face of an evil world a God at once omnipotent and beneficent, are all most interesting and instructive to the student of the history of philosophy.

Prof. Scott seems always to be on the side of good sense and probability. One may perhaps think that *εὐτελείας* is the right reading in *Pap.* 152, Fr. 85, col. 2, l. 13, supposing the dot over the *υ* should be over the *κ*, and remembering *φιλοκαλοῦμεν μετ' εὐτελείας* in Thucydides: that the contradiction caused by Fr. 86, col. 5, l. 28, is due to the return of common sense after she has been driven out by the pitchfork of such unpractical ideas as the perfect man: that *διειλημμένως* in *Pap.* 26, col. 14, l. 10, means 'interpenetrated thereby,' as in Plat. *Phaed.* 81 C., and *ἀδιαλήπτως*, 'without seizing thoroughly' (the significance of the gods). The adult man when once interpenetrated with fear of the gods (say, under some great calamity) afterwards oftentimes turns his thoughts to them, though in a less strong degree, and so not grasping their real nature: if he does not think of the gods at all, the trouble of soul remains; and even if the trouble leaves no trace, and yet the man does not investigate and find out that the causes of his sufferings are material, he is no better off, he is liable to the same terrors again. Materialism is alone able to make and keep a man unterrified by the gods. These and many other such debateable points the reader might wish to discuss further with Prof. Scott, and convince or be convinced. For the present we must content ourselves with offering him the praise and thanks which are

due for such an elaborate and complete work as he has issued, and which has given to the world the results of singular learning, patient labour, and acute reasoning.

LOUIS C. PURSER.

CATALOGUS CODICUM GRÆCORUM SINAITICORUM.
 SCRIPSIT V. GARDTHAUSEN LIPSIENSIS. *Oxonii: E
 Typographeo Clarendoniano, MDCCCLXXXVI. pp. viii.*
 294.

THE Library of the Convent of St. Catharine on Mount Sinai has long had an interest for the learned, especially since Tischendorf's discovery there of the Codex now called Sinaiticus. The question could not fail to be often asked, What other treasures may not be there concealed? In order to answer this question the University of Leipsic in 1880 sent Prof. Gardthausen to examine the library of Mount Sinai as well as that of the Patriarch of Alexandria. The present volume is the result of his labours at Mount Sinai. Never, he assures us, has he seen Codices of venerable age so neglected and so injured by time. Many of the best are hidden away in chests in the chapel of the Virgin, 'rudis indigestaque moles.'

The total number of items catalogued is 1223. The great majority are, as might be supposed, biblical or ecclesiastical. Thus there are 55 separate copies of the four Gospels, besides as many evangeliaria, ranging from the ninth century to the sixteenth. Of the Psalms there are 128 copies, about 28 of which date from the sixteenth and seventeenth centuries. Homilies, other patristic works, Lives of Saints, liturgical works, etc., are numerous. There are two Euripidean Codices, one of the fifteenth century, containing the Hecuba, Orestes, and Phœnissæ,

in which it deserves to be noticed that *γράμμαρος* is twice written for *δράμαρος*; the other of the 14th century, with scholia, containing fragments of the same plays.

Professor Gardthausen has provided very complete indices, with the help of which the student can readily find whatever he may be in search of. For example, we find here described the most ancient dated Greek manuscript written on 'charta bombycina' (No. 973), dated 1153, and another still older, apparently, on the same material, not dated, but assigned by the Professor to the X.-XI.th century. Many of the MSS. assigned to the 10th century have the letters written below the line. One modest scribe calls himself *κακομόναχος καὶ κακογράφος. ῥακενδύτης* is a frequent epithet of the scribe. It is not Professor Gardthausen's fault that this Catalogue is not complete. The monks assured him—'omni adseveratione'—that no other Greek MSS. existed besides those that he had examined, but he has since found that, for some unknown reason, some were kept back both from him and from the Russian scholar Kondakoff, who visited the convent in 1881. The Catalogue of the Sinaitic MSS. is followed by a Spicilegium of the libraries of Alexandria and of Patmos, and there are added several facsimiles of MSS. and ornaments.

T. K. ABBOTT.

OVID, 'TRISTIA,' Book I. The Text revised, with an Introduction and Notes by S. G. Owen, B. A., Classical Lecturer at the Owens College, Manchester, and formerly Open Exhibitioner of Balliol College, Oxford. *Oxford, at the Clarendon Press.* 1885.

THIS neat and carefully composed volume is the first instalment of two larger works on the *Tristia*—the first to deal with the text, and the latter to be a complete

edition with an extended explanatory Commentary. And certainly we have good reason, while welcoming this instalment, at the same time to look forward with interest to Mr. Owen's larger works; for an English edition of the *Tristia* and *Epistles from Pontus* is much wanted; and Mr. Owen justly says that the want of an edition systematically treating of the lives of Ovid and his friends is a principal reason of the neglect into which this portion of Ovid's writings has fallen—a portion which possesses considerable autobiographical interest, which shows so eminently Ovid's wonderful fluency of expression, and which is so admirably fitted for school reading. Accordingly, Mr. Owen gives a full account of the life of Ovid and his banishment—touching the cause of which he follows the now generally accepted view of M. Gaston Boissier—and tells us all that is known about his various friends and patrons. This latter section wanders a little outside the scope of the volume, and belongs rather to the larger edition; but its completeness and learning render it very acceptable, and show Mr. Owen's wide knowledge of his subject and powers of exposition.

Indeed, in exposition Mr. Owen especially excels. Nothing could be more clearly and concisely put than his account of the Roman book in the Appendix, or his many notes on grammar which are models of clearness, *e.g.* 5.49 (origin of ablatives of comparison); 6.14 (periphrastic future in apodoses); 9.17 (tense after *dum*); and his translations are often most excellent, *e.g.* 4.6: 'erutaeque ex imis fervet harena fretis' is rendered 'and thrown up from the depths of the sea, the sand is a seething mass.'

If any fault is to be found with Mr. Owen, it is in sometimes deferring too much to authority, while he himself is so well equipped for forming independent judgments. Thus from the multitude of counsellors he does not definitely decide for *exilem* (2.86) meaning 'short,' the only inter-

pretation which the context will admit of; but the counselors have not (it would be a pity if they had) made him alter the order of lines in 6.29, fol., or fail to interpret 'hauserat' (11.16) by 'drained.' The note on this latter passage by Mr. Owen is admirable. Again, is there any evidence for the interpretation of 'tituli' (1.53), taken from Rich? Does 'titulus' originally mean anything more than an inscription, especially one recounting exploits on statues (Juv. 1. 130), or tombstones (Juv. 10. 143), or trophies (Tac. An. ii. 18, 22), and hence 'fame.' Something more definite than Trist. iv. 2. 20 (cf. Prop. iv. 4. 16) must be adduced to prove that this term was specially applied to notice-boards carried in triumphs. At 1.96 the reference to Cic. *Att.* i. 19. 9 is not to the point: 'tamen' merely means 'however' there, and does not go closely with 'aliquid.' At 3. 22 I question if 'funus tacitum' was a technical term for an ordinary (tralaticium) funeral, though Rich and Göll (Gallus III. 495) take it as such, but without further evidence than our present passage. No doubt the plebeian funeral *was* 'tacitum' in comparison with the cornua, tubae, tibicines, &c. &c. of the noisy (Hor. *Sat.* i. 6. 43) funerals of the great. The interpretation of 'ab hac' (3. 29) given by Mr. Owen, viz. 'close to her,' may be virtually right, though the words cannot have quite such a pregnant force; they cannot mean more than 'in her direction.' Such an extensive idea as 'close to her,' towering up to her, Ovid would have expressed more fully. Further, in *Met.* 9. 33 'a pectore varas' means 'curved *away from* my breast' in the posture of defence. But would a defender of 'by means of her' deserve no hearing? Would that use of 'ab' be harsher than (say) 'turbo quem celer assueta versat ab arte puer' (Tibull. i. 5. 4). Does not the addition of 'cernens', too, make for this interpretation? It is rather otiose otherwise. Again, in 3. 88, is 'dare manus' the regular phrase for a conquered *gladiator* extending his hands

towards the conqueror in confession of defeat? Is it not rather, as Orelli on Hor. *Epod.* 17. 1, and Long on Cæs. *B. G.* v. 31, take it, of the conquered soldier holding out his hands to the conqueror to bind? We may compare Ovid, *Pont.* i. 2. 48, 'et dare captivas ad fera vincla manus'. Nor does it seem imperative to take 'libellus' as necessarily having a diminutive force in 7. 33; it is rather used metri gratia: cf. Catull. 14. 11, also Juv. 13. 62, compared with Cic. *Divin.* i. 72. And I cannot for a moment believe that in the very fine simile (9. 13) Ovid had even the slightest thought of the slang sense of 'umbra', 'a hanger-on', 'an uninvited guest'; it would be painfully incongruous; besides he is talking, not of parasites, but of the fickle crowd of clients. Lastly, what was the name of the ship in 10. 1? Was it Minerva? We often find ships of that name (C.I.L. x. 3406, 3453, 3520, 3619, 3626). Or was it 'Cassis,' as v. 3 seems to indicate? I do not know any example of a ship called after an inanimate object except 'Quadriga' (Wilmanns, 1667). I do not believe that Armata, C.I.L. x. 3589, is the name of a 'liburna.'

As regards settling the text, Mr. Owen has done good service. Besides making us acquainted with the valuable MS. of Holkham Hall, and collating a vast number of others, he has estimated the value of all the different MSS. of the *Tristia*, and reduced them to their proper classes, showing the few really important MSS., and the mass of interpolated ones. This leads to readings different from the ordinary text, e.g. '*piis*' for '*pius*' in 2. 104. And Mr. Owen deserves congratulation for inserting '*est*' in 8. 16. The defence of Merkel's conjecture, 8. 21, *vel dicare*, and of the ordinary reading *reliquit* (for *relegit*) in 10. 24, seem quite satisfactory. But it is impossible to follow Mr. Owen in reading (9.35), *Esto et iam miseris pietas*. The ordinary reading will do very well—'there is a fitting affection due towards poor exiles, too (as well as towards these illustrious

and equal friends), and it is approved of even when shown to an enemy; but ah! how few I can move to hearken to my words'.

This is, however, a very small matter. If we were to give all the excellent notes, we should reprint nearly the whole volume. It is beautifully produced, and accurately printed, though in note on 2. 31 we should have *fugiatve*, on 2. 48 *πετροβόλος*. In short, the book is a really admirable little edition, and one likely to induce students to read the *Tristia*, and read them with pleasure. Mr. Owen has taken this comparatively uncultivated field of the *Tristia* and *Pontic Epistles* to himself, and the *proscissio* has been most successful; so that we feel sure from his labours thereon a rich crop will be produced, when we come to the harvest.

LOUIS C. PURSER.

ECONOMIC NOTES.

THE disinclination of English economists to examine the history and development of their subject has led to the existence and perpetuation of the most curious errors, with regard to the views held by even the most eminent expounders of the science; and as a further result the criticism of the various doctrines is by no means thorough. The following notes deal with some points which have, I venture to think, been generally misapprehended:—

I.

All writers, till a very recent period, have represented the mercantile theory as resting on a simple and contemptible delusion, viz. the belief that money was the only form of wealth; though more correct views are to be found in the later histories, the exact position of the English mercantilists is not clearly stated. In reality such writers as Mun, so far from being reactionary, were reformers who sought to remove the prohibition previously existing on the exportation of the precious metals. Their attitude towards those earlier writers, who supported the 'balance of bargains' theory—to use Jones's phrase—resembles that of the moderate protectionists in the United States towards the more extreme advocates of restriction. A reference to A. Smith's quotations would suggest this view, which Mun's work, *England's Treasure in Foreign Trade*, confirms.

II.

The *Physiocrats* have also suffered at the hands of their successors. We are led to believe that they ad-

vanced a doctrine directly opposed to the most obvious facts, namely, that the cultivator of the soil is the only real producer of wealth. Not to dwell on the distinct declaration of Turgot, that Gournay, an important member of the school, held that real wealth was produced in manufactures, it is well to see in what respect these active and conscientious thinkers, taken as a body, were really peculiar. It was in their view of 'net produce,' which they believed could be obtained from land only; a doctrine which, though in general erroneous, would under certain conditions be correct. For let it be assumed that wages are at the minimum—the natural rate according to A. Smith and Ricardo—and further that profits also are in the same position, then it seems clear that there would be no room for saving from either of these constituents of gross revenue, nor could either be taxed, since any reduction in the rate of wages would starve the labourer, and any lowering of profits would diminish savings. Such is substantially the view put forward by the editor⁴ of the Kehl edition of Voltaire in defending the Physiocrats against the sarcasms levelled at them in *L'homme aux quarante écus*.

It is interesting to notice the gradual extension of the term 'net produce'; with the French *économistes* it is only to be found in rent: A. Smith and his followers added profits as a further source; and, finally, J. S. Mill (Book I. ch. xi. § 1) extends it, so as to include that portion of wages which exceeds the minimum. A curious survival of the physiocratic doctrine is to be found in Cairnes' objection to the action of trades unionism (*Leading Principles*, ch. iii. pt. 2, § 6), which rests on the assumption that profits are at the minimum, and therefore cannot be reduced.

⁴ Probably Condorcet.

III.

In considering the meaning ascribed by A. Smith to the term 'Political Economy', the decisive passage seems to have been overlooked by his numerous editors. It is not the frequently-quoted statement at the opening of Book IV., but rather the following: Speaking of the 'Physiocrates' (Book IV., ch. ix., ed. M'Culloch 307a) he says, 'This sect in their writings, which are very numerous, and which treat not only of what is properly called Political Economy, or of *the nature and causes of the wealth of nations*, &c'. It is therefore certain that 'an inquiry into Political Economy' is exactly the same as 'an inquiry into the nature and causes of the wealth of nations', the very title of his work, and Mr. Sidgwick's idea that he did not intend to write a treatise on Political Economy, is disposed of. Two reasons may plausibly be given for the adoption of the longer title. In the first place it is less technical and more likely to attract the general reader; and again, the other title would have invited comparison with Sir J. Stewart's *Principles of Political Economy*, a work which, while completely refuting its doctrines, he intentionally avoided noticing.

IV.

The arrangement of the *Wealth of Nations* has been admitted by M'Culloch to be 'perplexed and illogical.' Dr. Cossa tells us that it has 'no systematic arrangement,' and economists generally seem to accept this judgment; but whatever be the weight of authority in its favour, it arises from the adoption of a wrong stand-point. The critics start from Say's conception of Economics as The science which treats of the production, distribution, and consumption of wealth, and it is only natural that, tried by this test, the *Wealth of Nations* should appear confused.

A. Smith may, however, fairly claim to be judged from his own point of view, and if this be done the arrangement will appear sufficiently clear and judicious. His work falls into four parts: (1) Books I. and II., which deal with Economic Theory; (2) Book III., treating of Economic History; (3) Book IV., which treats of Economic Policy; and (4) Book V., which contains the foundations of the Science of Finance. The eminent German economist Rau, and many other writers in that country, have followed the arrangement thus sketched out. Knies, for instance, tells us that Theory, Politics, and Finance, are the three departments of national economy. The sub-division of the part which deals with theory is peculiar, but from A. Smith's position defensible. He is considering the causes of wealth, which he finds are two: (1) The skill, dexterity, and judgment with which labour is applied; and (2) the proportion between producers and non-producers: the former is determined by division of labour; the latter by the proportion between capital and revenue; therefore the division of labour is the opening subject of Book I., and capital the main topic of Book II.

V.

The disposition of English economists from 1820 onwards has been to separate Ricardo's *Principles* from A. Smith's work, and to regard the latter as superseded. Thus, J. S. Mill speaks of the 'superior lights' of Ricardo, and De Quincy extols him in the most extravagant way. Now that the inevitable reaction has set in, it may be well to notice that the *Principles of Political Economy and Taxation* is merely a development of special parts of A. Smith's exposition; and that, as a whole, it cannot be properly understood apart from its foundation. Its relation to the *Wealth of Nations* closely resembles that of Cairnes' *Leading Principles* to J. S. Mill's treatise. It may best be re-

garded as composed of three separate sections, viz:—(1) Chaps. 1–7, which expand and criticise A. Smith's theory of value and distribution, by the aid of Malthus' theory of rent, and the author's more rigid conception of a natural rate of wages; (2) Chaps. 8–18, which, in like manner, develop and amend A. Smith's doctrines on Taxation; and (3) Chaps. 19–32, which consist of miscellaneous criticisms on various doctrines of A. Smith, Malthus, and Say. The great error of Ricardo's followers seems to have been their belief that his was a didactic work, whereas it was essentially one of investigation.

VI.

The arrangement of J. S. Mill's *Principles* is easily seen to be a modification of that adopted by J. B. Say; but though the work of a trained logician, it is nevertheless extremely defective—much more so than its model; for—(1) The omission of a separate department dealing with consumption produces various difficulties, such as the introduction of the proposition 'Demand for commodities is not a demand for labour,' in a most unsuitable place;¹ and, as a consequence, its establishment as the true *pons asinorum* of the subject; the strange disregard of the evils inflicted on consumers by retaliatory revenue duties, and his neglect of the different effects of different forms of expenditure. (2) The separation of exchange and distribution, though in itself expedient, is spoiled by putting exchange after distribution proper, so that the student stumbles on supply and demand before the meaning of those important terms has been explained (it is a minor matter that the use does not correspond with the later formal definition). Those later writers who, like Cherbuliez, Walker, and Sidgwick, treat of exchange first, are surely wiser. (3) The addition of a special book on 'dynamical' as apart from 'statical'

¹ It of course belongs to consumption.

economics, though due to the authority of Comte, was a most unlucky innovation; for the conception is not consistently carried out (Chaps. 10-13 of Book I., which treat of the laws of increase of the productive agents, belong, properly speaking, to dynamics). Nor, if it were, is it possible to isolate the economic from the other aspects of social progress. The consequence is, that in Mill's 4th Book we find only a statement of some general tendencies which are partially operative in a particular stage of English economy, but which are certainly not applicable to economic development in general, as the interesting but too brief notice of actual economic progress given in the introduction is sufficient to prove. (4) The functions of the State are correctly treated separately, but various chapters in the preceding Books should have been reserved for this practical part; amongst these may be mentioned the chapter on 'The Abolition of Cottierism,' and the two chapters dealing with 'Remedies for Low Wages' in the 2nd Book, as also that on 'The Regulation of the Currency' in the 3rd Book. (5) It is a serious defect that the rules which should guide individual action in economic matters are only incidentally touched on.

It may, perhaps, be admissible to support the foregoing criticism of Mill's arrangement by stating what appears to be the really correct one. The main division is into *science* and *art*; the former is best subdivided into four departments—production, circulation (which includes both exchange and transport), distribution, and consumption: the latter would have two branches, viz.—(1) the action of the State respecting wealth, or *economic legislation*, and (2) individual conduct or economic morality, if the term may be allowed. This latter branch would be in close connexion with the scientific department of consumption. In each section the evolution of the various economic structures and functions should be considered, as well as their supposed normal condition.

VII.

‘The distribution of wealth, therefore, depends on the laws and customs of society’: J. S. Mill, *Principles*, Book II., ch. i., § 1. ‘The three requisites of production . . . are labour, capital, and land . . . Since each of these elements of production may be separately appropriated, the industrial community may be considered as divided into landowners, capitalists, and productive labourers . . . These three classes are considered in political economy as making up the whole community’: *ib.*, Book II., ch. iii., § 1.

We learn from the *autobiography* that Mill regarded the distinction between the laws of production and those of distribution as his principal contribution to economics; but the passages quoted above show that his ideas were not quite clear on the point in question. The term distribution can bear at least two different meanings—(1) the division of wealth among the different persons or social classes which constitute a society; and (2) the division of the produce among the owners of the several agents of production. The latter is its meaning in the second passage quoted, and, if adopted, it follows that A. Smith and Ricardo were right in holding that distribution was governed by definite laws in the same manner as production; for the share due to each productive agent is under a system of competition capable of precise determination, and is not, therefore, a matter for human arrangement. Mill’s confusion is the result of his not thoroughly carrying out the fruitful idea that distribution is a social matter, and that the organization of classes is quite distinct from the question of the ownership of the various requisites of production.

VIII.

‘Only through the principle of competition has political economy any pretension to the character of a science’: J. S. Mill, *Principles*, Book II., ch. iv., § 1.

There is here a confusion between 'science' and 'exact science.' Economic science meets with customary conditions in almost all states of society, and, therefore, could hardly ever exist if Mill's statement were true. It would be as reasonable to say 'Only through the principle of gravitation has Geology any pretension to the character of a science.' Bagehot seems to adopt this erroneous view when he speaks of the 'customary' as the 'pre-economic' age (*Physics and Politics*, p. 11); but the context shows that he alludes to the current economic precepts, which he regards as 'political economy,' a different, but still more vulgar error.

IX.

The theory of International Exchanges, or, to speak more generally, exchanges between distant places: J. S. Mill, Book III. ch. xvi. § 2.

This passage, and several which immediately follow it, suggest, if they do not directly state, an erroneous doctrine, namely, that the peculiar theory of international trade and values is based on the fact of distance, and is merely a special case of a more general problem. This idea has been adopted by Mr. Sidgwick (*Principles*, Book II. ch. iii. § 2) who then naturally criticises Mill's procedure (in Book III. ch. xviii.) of omitting cost of carriage as non-essential. Mr. Macleod also avails himself of Mill's statements, in order to assail the theory, by showing the difficulty of drawing a line between the two classes of near and distant exchanges. In truth, the substance of Mill's doctrine is sound, though the particular mode of statement is objectionable. The need of a special theory for international values arises from the immobility of labour and capital, which may indeed be produced by distance, but may also result from various other causes. Ricardo and Cairnes have both adhered to this more correct view.

X.

‘The only case in which, on mere principles of political economy, protecting duties can be defensible is, when they are imposed temporarily (especially in a young and rising nation) in hopes of naturalizing a foreign industry, in itself perfectly suitable to the circumstances of the country’: J. S. Mill, *Principles*, Book V., ch. x., § 1. This concession to protectionism has perhaps been more frequently quoted than any other passage in the book, but its real bearing has not been accurately appreciated. It should be noticed that it only applies to an industry *previously unknown* in the protecting country (hence the special reference to young countries), and, as stated, is theoretically defensible. It fails, however, as a practical rule—and the question of protection is always practical, not theoretical—owing to the non-recognition of other elements; for—(1) The loss inflicted by a protecting duty is present and certain; the gain is future and contingent; interest on the wealth sacrificed during the period of protection should therefore be taken into account;¹ (2) There is the serious danger of protecting unsuitable industries, in which case the loss will not be recompensed by any gain; (3) The duty should be only for the right amount; if for more, it enables the producers to gain unduly; if for less, it is ineffectual; (4) It should be retained for the right time, and no longer, for similar reasons to those assigned in the last case. When we remember that for each commodity a different rate of duty, and a different time, would probably be advisable, the complexity of the problem is apparent, and we see that the possibilities of mistake are increased; (5) Mill does not allow for the over-sanguine disposition of mankind, which was recognized by A. Smith, as inducing men to engage even in the most hopeless enterprises, and he moreover

¹ Professor Sumner has pointed out this in his recent work, *Protectionism*, pp. 115-6.

disregards the value of the ultimate good-will of a business established by initial losses ; (6) If the theory of profit advanced by Professor Walker, which assimilates it to rent, be correct, another objection exists. Will not protection lower the no-profit margin, and thus enable the more skilled employers, and those possessing partial natural monopolies, to gain an unearned increment ? It should be added that the actual distribution of the various manufacturing industries tends to support Walker's doctrine ; (7) The industries being all foreign, and needing to be naturalized, it follows that only a few industries can be thus treated, and the advantage would therefore be *trifling*, and one to which the maxim *de minimis non curat lex* would apply.

When all the above considerations are taken into account—they are independent, and, united, possess cumulative force—it seems to follow that Mill's exceptional case is a mere theoretical subtility, and does not come within the region of practice. Nor is this an isolated instance in Economics: the case of an inconvertible paper currency, strictly limited as to quantity, is still stronger ; but though Mill recognizes in theory the possibility of issuing such a currency without depreciation, in practice he rejects it, and dwells on 'the importance of adhering to a simple principle intelligible to the most untaught capacity', and adds, 'the temptation to over-issue in certain financial emergencies is so strong that nothing is admissible which can tend in however slight a degree to weaken the barriers which restrain it': *Principles*, Book III. ch. xiii., § 2. The substitution of 'protection' and 'political' for 'over-issue' and 'financial' in the above passage will not weaken its force. We may with considerable confidence hold that 'taxation for revenue, and revenue only,' is the sound rule for the statesman.

C. F. BASTABLE.

GREEK GEOMETRY FROM THALES TO EUCLID.*

DINOSTRATUS was brother of Menaechmus, and is mentioned by Eudemus, together with Amyclas and Menaechmus, as having made the whole of geometry more perfect.¹

The only notice of his work which has come down to us is contained in the following passage of Pappus :—

‘For the quadrature of the circle a certain curve’ was employed by Dinostratus, Nicomedes, and some other more recent geometers, which has received its name from the property that belongs to it; for it is called by them the quadratrix (τετραγωνίζουσα), and its generation is as follows :—

‘Let a square $\alpha\beta\gamma\delta$ be assumed, and about the centre γ let the quadrant’ $\beta\epsilon\delta$ be described, and let the line $\gamma\beta$ be

* The previous portions of this Paper have appeared in HERMATHENA, Vol. iii., No. v.; Vol. iv., No. vii.; and Vol. v., Nos. x. and xi.

Since the publication of the last part the two works announced in the note on the title (HERMATHENA, Vol. v., p. 403) have appeared: Autolyçi *de Sphaera quae movetur Liber, De ortibus et occasibus Libri duo*: una cum scholiis antiquis e libris manuscriptis edidit Latina interpretatione et commentariis instruxit F. Hultsch, Lipsiae, 1885; *Diophantos of Alexandria*; *A Study in the History of Greek Algebra*, by T. L. Heath, Cambridge, 1885.

The following works have also been published: Euclid’s *Elementa*, edidit et Latine interpretatus est J. L. Heiberg, Dr. Phil., vol. iv. libros xi.–xiii. continens, Lipsiae, 1885; *Die Lehre von den Kegelschnitten im Altertum* von Dr. H. G. Zeuthen, erster halbband, Kopenhagen, 1886.

¹ See HERMATHENA, vol. v. p. 406 (a).

² γραμμή. The Greeks had no special name for ‘a curve.’

³ περιφέρεια, arc. ‘Ex recentiorum usu περιφέρειαν id est partem aliquam totius circuli circumferentiae, Ernestum Nizze, Theodosii interpretem, secuti plerumque arcum interpretati sumus.’

Pappus has, moreover, transmitted to us the property of the quadratrix, from which it received its name, together with the proof. It is as follows:—

‘If $\alpha\beta\gamma\delta$ be a square, and $\beta\epsilon\delta$ be the quadrant about the centre γ , and the line $\beta\eta\theta$ be the quadratrix described as in the manner given above; it is proved that: as the quadrant $\delta\epsilon\beta$ is to the straight line $\beta\gamma$, so is $\beta\gamma$ to the straight line $\gamma\theta$. For if it is not, the quadrant $\delta\epsilon\beta$ will be to the line $\beta\gamma$ as $\beta\gamma$ to a line greater than $\gamma\theta$, or to a lesser.

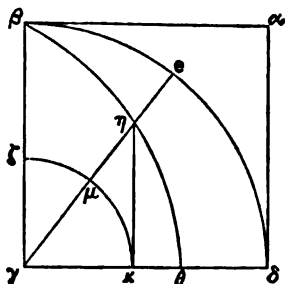
‘In the first place let it be, if possible [as $\beta\gamma$], to a greater line $\gamma\kappa$; and about the centre γ let the quadrant $\zeta\eta\kappa$ be described, cutting the curve at the point η ; let the perpendicular $\eta\lambda$ be drawn, and let the joining line $\gamma\eta$ be produced to the point ϵ . Since then: as the quadrant $\delta\epsilon\beta$ is to the straight line $\beta\gamma$, so is $\beta\gamma$ —that is $\gamma\delta$ —to the line $\gamma\kappa$, and as $\gamma\delta$ is to $\gamma\kappa$, so is the quadrant $\beta\epsilon\delta$ to the quadrant $\zeta\eta\kappa$ (for the circumferences of circles are to each other as their diameters),⁵ it is evident that the quadrant $\zeta\eta\kappa$ is equal to the straight line $\beta\gamma$. And since, on account of the property of the curve, there is: as the quadrant $\beta\epsilon\delta$ is to the arc $\epsilon\delta$, so is $\beta\gamma$ to $\eta\lambda$; and therefore: as the quadrant $\zeta\eta\kappa$ is to the arc $\eta\kappa$, so is the straight line $\beta\gamma$ to the line $\eta\lambda$. And it has been shown that the quadrant $\zeta\eta\kappa$ is equal to the straight line $\beta\gamma$; therefore the arc $\eta\kappa$ will be equal to the straight line $\eta\lambda$, which is absurd. Therefore it is not true that: as the quadrant $\beta\epsilon\delta$ is to the straight line $\beta\gamma$, so is $\beta\gamma$ to a line greater than $\gamma\theta$.’

‘Further, I say, that neither is it to a line less than $\gamma\theta$. For, if possible, let it be to $\gamma\kappa$, and about the centre γ let the quadrant $\zeta\mu\kappa$ be described, and let the line $\kappa\eta$ be drawn at right angles to the line $\gamma\delta$, cutting the quadratrix at the point η , and let the joining line $\gamma\eta$ be produced to the

⁵ ‘Hoc theorema extat v propos. 11 et VIII propos. 22; simul autem scriptor tacite efficit circulorum arcus quibus

aequales anguli insistent inter se esse ut radios.’ (*Ibid.* p. 257, n.)

point ϵ . In like manner then to what has been proved above, we show that the quadrant $\zeta\mu\kappa$ is equal to the straight line $\beta\gamma$, and that: as the quadrant $\beta\epsilon\delta$ is to the arc $\epsilon\delta$ —that is, as the quadrant $\zeta\mu\kappa$ to the arc $\mu\kappa$ —so is the



straight line $\beta\gamma$ to the line $\eta\kappa$. From which it is evident that the arc $\mu\kappa$ is equal to the straight line $\kappa\eta$, which is absurd. Therefore it is not true that: as the quadrant $\beta\epsilon\delta$ is to the straight line $\beta\gamma$, so is $\beta\gamma$ to a line less than $\gamma\theta$. Neither is it to a greater, as has been proved above; therefore it is to the line $\gamma\theta$ itself.*

Pappus continues—‘This also is evident, that if a third proportional be taken to the straight lines $\theta\gamma$, $\gamma\beta$, the straight line [thus found] will be equal to the quadrant $\beta\epsilon\delta$; and four times this line will be equal to the circumference of the whole circle. But the straight line, which is equal to the circumference of a circle, being found, it is evident that a square equal to the circle itself can be easily constructed: for the rectangle under the perimeter of a circle and its radius is double of the circle, as Archimedes proved.’

Pappus also relates that Sporus justly found fault with this curve, for two reasons:—

* *Ibid.* pp. 256, 258.

† ‘Paulo aliis verbis Pappus id theoremata enuntiat atque ipse Archimedes circuli dimens. propos. 1: πᾶς κύκλος

ἴσος ἐστὶ τριγώνῳ ὀρθογωνίῳ, οὗ ἡ μὲν ἐκ τοῦ κέντρου ἴση μὲν τῶν περὶ τὴν ὀρθήν, ἡ δὲ περίμετρος τῇ λοιπῇ. (*Ibid.* p. 259, n. 2.)

1. 'It takes for granted the very thing for which the quadratrix is employed; for it is not possible to make one point move from β to γ along the straight line $\beta\gamma$ in the same time that another point moves along the quadrant $\beta\epsilon\delta$, unless the ratio of the straight line to the quadrant is first known, inasmuch as it is necessary that the rates of the motions should be to each other in the same ratio.'

2. 'The extremity of the curve which is employed for the quadrature of the circle—that is, the point in which the quadratrix cuts the straight line $\gamma\delta$ —is not found; for when the straight lines $\gamma\beta$, $\beta\alpha$, being moved, are brought simultaneously to the end of their motion, they coincide with the line $\gamma\delta$, and no longer cut one another—for the cutting ceases before the coincidence with the line $\alpha\delta$, which intersection on the other hand is taken as the extremity of the curve, in which it meets the straight line $\alpha\delta$: unless, perhaps, some one might say that the curve should be considered as produced—just as we suppose that straight lines are produced—as far as $\alpha\delta$; but this by no means follows from the principles laid down; but in order that this point θ may be assumed, the ratio of the quadrant to the straight line must be presupposed.'

He then adds, that 'unless this ratio is given, one should not—trusting to the authority of the inventors—accept a curve, which is rather of a mechanical kind ($\tau\eta\nu\ \gamma\rho\alpha\mu\mu\eta\nu\ \mu\eta\chi\alpha\nu\iota\kappa\omega\tau\acute{\epsilon}\rho\alpha\nu\ \pi\omega\varsigma\ \omicron\upsilon\delta\sigma\alpha\nu$).'⁸

Sporus was a mathematician whose solution of the Delian problem has been handed down by Eutocius in his Commentary on the treatise of Archimedes *On the Sphere and Cylinder*;⁹ this solution, he tells us, is the same as that of Pappus, which precedes it in Eutocius, and which is also given by Pappus himself in the third and eighth books of

⁸ *Ibid.* pp. 252, 254.

mentariis Eutocii, ed. Heiberg, vol. iii.

⁹ Archimedis, *Opera omnia cum com-*

pp. 90, 92.

his *Collections*.¹⁰ M. Paul Tannery thinks that Sporus was the teacher, or an elder fellow-pupil of Pappus, and places him towards the end of the third century of our era; and, further, he identifies him with Porus (Sporus) of Nicaea, the author of a collection entitled *Ἀριστοτελικά Κηρία* (see HERMATHENA, vol. iv. p. 188), which contained, according to M. Tannery, extracts from mathematical works relating to the quadrature of the circle and the duplication of the cube, as also a compilation in relation to the *Meteorologics* of Aristotle. M. Tannery is of opinion, moreover, that the historical works of Eudemus were driven out of the field at an early period by compilations from them, that the *History of Geometry* in particular did not survive the fourth century, and that this Collection of Sporus was the principal source from which Pappus, Simplicius, and Eutocius derived their information concerning these two famous geometrical problems.¹¹

In any case, it seems to me probable that a valuable fragment of the *History of Geometry* of Eudemus is preserved in the extracts from Pappus given above, whether they have been taken by Pappus from that *History*, or derived second-hand through Sporus [Porus].

On examining the demonstration of the property of the quadratrix given above, we see that the following theorems are required for it:—

(a). The circumferences of circles are to each other as their diameters.

(b). The arcs of two concentric circles, which subtend the same angle at their common centre, are to each other as the quadrants of those circles.

¹⁰ Pappi, *Op. cit.*, vol. i. p. 64, sq., vol. iii. p. 1070, sq.

¹¹ *Sur les fragments d'Eudème de Rhodes relatifs à l'histoire des mathématiques*; also, *Sur Sporus de Nicée*; Annales de la Faculté des Lettres de

Bordeaux, pp. 70-76, 257-261, 1882. Cf. *Pour l'histoire des lignes et surfaces courbes dans l'antiquité*. Bulletin des Sciences Mathém. et Astronom., 2^e série t. vii.

This theorem is an immediate consequence of Euclid, vi. 33 :—

(c). In equal circles, angles at the centre have the same ratio to each other as the arcs on which they stand.

We see, further, that the following assumptions are made in the proof:—

1°. An arc of a circle less than a quadrant is greater than the perpendicular let fall from one of its extremities on the radius drawn through the other ;

2°. And is less than the tangent drawn at one extremity of the arc to meet the radius produced through the other.

We notice, moreover, that the proof is indirect ; and it is, indeed, as Cantor has remarked, the first of the kind with which we meet.¹² We have seen, however, that Eudoxus must have been familiar with this method of reasoning (see HERMATHENA, vol. v., p. 224) ; and we know that Autolycus of Pitane, in Aeolis, who was a contemporary of Dinostratus, makes use of the argument :—*ὅπερ ἐστὶν ἄτοπον, or ἀδύνατον*, in many propositions of his book *Περὶ κινουμένης σφαίρας*.¹³

We see, too, that the investigation of Dinostratus, which gives a graphical solution of the determination of the ratio of the circumference of a circle to its diameter, is a complement to the work of Eudoxus, for the problem which was solved by means of the quadratrix arose naturally from the theorem that *circles are to each other as the squares on their diameters*.

It is to be observed, then, in the first place, that the problem which is solved above by means of the quadratrix is, in reality, the rectification of the quadrant, and that it

¹² Cantor, *Geschich. der Math.*, p. 213.

¹³ Autolyci, *Op. cit.*, pp. 12, 4 ; 14, 7 ; 24, 14 ; 32, 4 ; 8, 17 ; 22, 1.

is taken for granted that the quadrature of the circle—from which the name of the curve is derived—follows from its rectification. Secondly, we see that in order to make this inference the theorem—the area of a circle is equal to one-half the rectangle under the circumference, or four times the quadrant, and the radius—must be assumed. This theorem is equivalent to the first proposition of Archimedes, *Dimensio circuli*, referred to above. Lastly, it is noteworthy that the rectification of the quadrant is obtained by means of principles which are substantially the same as those assumed by Archimedes, and adopted by all geometers, ancient and modern.¹⁴

It seems to be a legitimate inference from this that these axioms must be referred back to Dinostratus, and most probably to Eudoxus.

Pappus, no doubt, in two places—v., prop 11, and viii., prop. 22—proves that the circumferences of circles are to each other as their diameters,¹⁵ and, in each place, makes the proof depend on the theorem cited above. He adds, however, in the former proposition:—‘The same may be proved without assuming that the rectangle under the diameter of a circle and its periphery is four times the circle. For the similar polygons, which are inscribed in circles, or circumscribed about them, have perimeters which have the same ratio to each other as the radii of the

¹⁴ ‘Nous partirons, pour la solution de ce problème [de la rectification des courbes], du principe d’*Archimède*, adopté par tous les géomètres anciens et modernes, suivant lequel deux lignes courbes, ou composées de droites, ayant leurs concavités tournées du même côté et les mêmes extrémités, celle qui renferme l’autre est la plus longue. D’où il suit qu’un arc de

courbe tout concave du même côté, est plus grand que sa corde, et en même temps moindre que la somme des deux tangentes menées aux deux extrémités de l’arc, et comprises entre ces extrémités et leur point d’intersection.’—Lagrange, *Théorie des Fonctions Analytiques*, p. 218. Paris, 1813.

¹⁵ Pappi, *Op. cit.*, vol. i., pp. 334, 336; vol. iii., pp. 1104, 1106.

circles, so that also the circumferences of circles are to each other as their diameters.'

Bretschneider thinks that the criticisms of Sporus are not of much importance, and says that they only come to this:—'That the quadratrix cannot be constructed geometrically, but is obtained only mechanically by means of a series of points, which must then be joined by a steady stroke of the free hand.'¹⁶ It seems to me, however, that these criticisms are just; and that Sporus and Pappus are right in maintaining that the description of the curve assumes the very thing for which the quadratrix is employed.¹⁷

Bretschneider shows that the theorem from which the quadratrix derives its name can be easily obtained by the infinitesimal method, 'by means of the proportion $\beta\epsilon\delta : \gamma\delta :: \epsilon\delta : \eta\lambda$, from the observation that the nearer the radius $\gamma\epsilon$ approaches to $\gamma\delta$, the more nearly does the sector $\gamma\epsilon\delta$ approach to a triangle similar to the triangle $\gamma\lambda\eta$; and therefore, for the limiting case, where $\gamma\epsilon$ and $\gamma\delta$ coincide, the ratio $\epsilon\delta : \eta\lambda$ actually passes over into that of $\gamma\delta : \gamma\theta$.' He adds:—'Such considerations have often served the old geometers as means for their discoveries, but are never used as proofs. The latter are always given through the *reductio ad absurdum*, which, indeed, allows no trace of the way followed in the inquiry to be recognized.'¹⁸ This observation is both just and important.

The same remark has been made by M. P. Laffitte, who points out that, in the establishment of any truth, there are

¹⁶ Bretschneider, *Geom. v. Eukl.*, p. 96.

¹⁷ 'Various other modes might be found of making either of these curves [the quadratrix of Dinostratus and the quadratrix of Tschirnhausen] square the circle; but the fact is that the descrip-

tion of the curves themselves assumes the point which their use is to determine.'—*English Cyclopædia*, sub. v., *Quadratrix*.

¹⁸ Bretschneider, *Geom. v. Eukl.*, p. 154.

two parts (or operations) which, he says, have not been hitherto sufficiently distinguished :

1°. The invention or the discovery of the proposition.

2°. Its proof.

And he further observes, that, after the discovery has been arrived at, the proof is often furnished by the method *ex absurdo*.¹⁹

In a former part of this Paper (HERMATHENA, vol. iv. pp. 220, *sq.*), I gave reasons in support of Hankel's opinion that the Hippias referred to by Proclus, in connexion with the quadratrix, is not Hippias of Elis.²⁰ As I mentioned, however, in giving them, I had not then read Cantor's defence of the common opinion ; but, on reading it subsequently, I was much struck with the force of his arguments, and introduced them in a note—the only course then open to me. M. Paul Tannery, in a Paper, the first part of which was published in the *Bulletin des Sciences Mathématiques et Astronomiques*, Octobre, 1883, and entitled, 'Pour l'histoire des lignes et surfaces courbes dans

¹⁹ P. Laffitte, *Les Grands Types de l'Humanité*, vol. ii., pp. 308, *et sq.* ; p. 328, *et seq.*

²⁰ For convenience of reference I quote them here :—

1. Hippias of Elis is not one of those to whom the progress of Geometry is attributed in the summary of the history of geometry preserved by Proclus, although he is mentioned in it as an authority for the statement concerning Ameristus [or Mamercus]. The omission of his name would be strange if he were the inventor of the quadratrix.

2. Diogenes Laertius tells us that Archytas was the first to apply an

organic motion to a geometrical diagram ; and the description of the quadratrix requires such a motion.

3. Pappus tells us that : 'For the quadrature of a circle a certain line was assumed by Dinostratus, Nicomedes, and some other more recent geometers, which received its name from this property : it is called by them the quadratrix.'

4. With respect to the observation of Montucla, I may mention that there was a skilful mechanic and geometer named Hippias contemporary with Lucian, who describes a bath constructed by him.

l'antiquité,'²¹ has criticized the reasons advanced by me against the common opinion:—

With reference to argument 1°, he replies:—'This omission is sufficiently explained by the discredit under which the sophists laboured in the eyes of Eudemus; and the list in question presents a much more remarkable one—that of Democritus.'

With reference to 2°, he says:—'This observation is not accurate. An indefinite number of points of the quadratrix, as near as one wishes, may be obtained by the ruler and compass; and it is doubtful whether the ancients sought any other process for the construction of this curve.' M. Tannery continues:—'The authority of Diogenes Laertius is, moreover, so much the less acceptable, inasmuch as he speaks in express terms of the solution of the Delian problem by Archytas. Now, Eutocius (*Archimedes*, ed. Torelli, pp. 143–144) has preserved to us, on the one side, this solution, in which there is not any employment of an instrument; and, on the other side (p. 145), a letter, in which Eratosthenes states that, "if Archytas, Eudoxus, &c., were able to prove the accuracy of their solutions, they could not realise them manually and practically, except, to a certain extent, Menaechmus, but in a very troublesome way."'²²

'The *Mesolabe* of Eratosthenes is, in fact, the oldest instrument of which the employment for a geometrical construction is known. This text indicates that, before Menaechmus, people were not engrossed with the practical tracing of curves; whilst the inventor of the conic sections would have tried, more or less, to resolve this question for the lines which he had discovered.'

As to these observations of M. Tannery, I admit that

²¹ *Bulletin des Sc. Math. et Astron.*,
2^e série, vii. 1 (1883), pp. 279 sq.

²² See HERMATHENA, volume v.,
p. 195.

Diogenes Laertius is not a safe guide in mathematics, as indeed I noticed in the first part of my Paper (HERMATHENA, vol. iii., p. 167, n. 16). In quoting him, I certainly did not mean to convey that, in my opinion, Archytas had actually traced the curve, used in his solution of the Delian problem, by any mechanical means; and I agree with M. Tannery that the letter of Eratosthenes is quite decisive on that point. At the same time it is evident that the conception of a curve being traced by means of motion is contained in the solution of Archytas, to whom, along with Philolaus, his master, and Eudoxus, his pupil, the first notions of mechanics are attributed. And with respect to the quadratrix itself, although, as M. Tannery remarks, an indefinite number of points on the quadratrix, as near as one wishes, can be obtained with the ruler and compass, yet the conception of motion is no less involved in the nature and very definition of the curve.

In reply to my observation 3°, M. Tannery says:—‘The divergence of the accounts given by Proclus and by Pappus is easily explained by the difference of the sources from which they drew. All that the former says of curves is undoubtedly borrowed from Geminus, an author of the first century before the Christian era; and his language proves that Geminus was acquainted with a writing of Hippias on the quadratrix, and regarded him as the inventor of this curve, though he was aware that Nicomedes also was engaged with it.’ M. Tannery continues:—‘As to Pappus, he quotes Geminus only *apropos* of the works of Archimedes on mechanics. He does not appear to have borrowed anything from him for geometry, particularly in the part which is concerned with curved lines and surfaces;’ and adds:—‘One can scarcely doubt but that Sporus was the source from which Pappus has derived what he says on the quadratrix.’ We have noticed this above.

With reference to 4°, M. Tannery says:—‘The existence of the Hippias referred to in it is by no means proved, for the writing in question seems to be only a pure fancy; but in any case it is impossible to think of any geometer posterior to Geminus, or even, as it seems to me, to Nicomedes.’

The suggestion which I made concerning Hippias, the contemporary of Lucian, was thrown out by me without sufficient consideration in reply to the observation of Montucla. Later, I became aware of the ideal character of that writing, and that it was the work of a *pseudo-Lucian*.²³

The result of the whole discussion seems to be: that the quadratrix was invented, probably by Hippias of Elis, with the object of trisecting an angle, and was originally employed for that purpose; that subsequently Dinostratus used the curve for the quadrature of the circle, and that its name was thence derived. This seems to be Cantor's view of the matter.²⁴ M. Tannery tells us that he, too, had at first interpreted the passage of Pappus in the same way as Cantor; but that, on further consideration, he thinks that it is open to grave objections. He says:—‘In the first place, the text of Geminus in Proclus clearly supposes that the name of the curve had been given to it by its inventor, Hippias. On the other hand, it is evident that the practical use of the curve implies the construction of a model cut in a square, having the quadratrix in place of the hypotenuse, and which could be applied, like our *protractor*, to the figures under consideration. Consequently, the determination of the intersection of the curve with the axis at once becomes necessary; and the problem is not, in

²³ See Zeller, *History of Greek Philosophy from the earliest period to the time of Socrates*, vol. ii., p. 422, n. 2,

E.T.

²⁴ Cantor, *Geschichte der Mathematik*, pp. 167 and 212.

reality, so difficult that we should think that Hippias was incapable of perceiving its relation to the quadrature of the circle. Finally, the fame of this last problem was at the time sufficiently great to lead Hippias to borrow from it the name of his curve, rather than from the problem which he had, without any doubt, considered in the first place.²⁵

These views of M. Tannery seem to me to be quite inadmissible, and are indeed quite inconsistent with what we know of Greek geometry (see HERMATHENA, vol. iv., p. 221 *et seq.*; vol. v., p. 223 *et seq.*).²⁶ The problem solved by means of the quadratrix must, as stated above, be regarded as the natural complement of the work of Eudoxus; and it is significant, therefore, that the solution was effected by Dinostratus, who probably was his pupil. Nor does the finding of the point of intersection of the curve with the axis necessarily involve the determination of π ; for, as seems to be suggested by Pappus, the required point might be regarded as determined by the production of the curve. The nature of the proof, too, which is indirect, appears to me to be post-Eudoxian. Should it be said that the theorem required for the determination of π was obtained first by the infinitesimal method, I would reply that it was not likely that this was done by Hippias of Elis, who was a senior contemporary of Democritus. If, then, the text in Proclus supposes that the name of the curve had been given to it by its inventor, it follows, in my opinion, that this could not have been Hippias of Elis. I am, however, on the whole, disposed to accept Cantor's view as given above.

²⁵ *Bull. des Sc. Math. et Astron.*, 2^e serie, vii., 1. p. 281.

²⁶ Cf. Heiberg, *Griechische und römische Mathematik*, Philologus, 1884, *Jahresberichte*, p. 474: 'Während Hankel p. 121 ff. die exhaustionsmethode auf Hippokrates zurückgehen

liess, und Cantor p. 209 die möglichkeit zugibt, hebt Allman, *Greek Geometry &c.* II. p. 221 ff. mit recht hervor, dass wir nicht berechtigt sind, diese methode für älter als Eudoxus zu halten.'

Pappus has preserved the name, and given some account of the work, of one other great geometer, who was a predecessor, and probably a senior contemporary of Euclid—Aristaeus the Elder. We have no details whatever of his life.

The passages in Pappus relating to him are as follows :—

(a) 'That which is called $\delta \text{ ἀναλυόμενος [τόπος]}$,²⁷ that is, the department of mathematics which treats of analysis, is, in short, a certain peculiar matter prepared for those who, having gone through the elements, wish to acquire the power of solving problems proposed to them in the construction of lines; and it is useful for this purpose only. It has been treated of by three men—Euclid, the author of the Elements, Apollonius of Perga, and Aristaeus the elder—and proceeds by the method of analysis and synthesis.'²⁸

Pappus, having defined analysis and synthesis, proceeds to give a complete list of the books, arranged in

²⁷ [τόπος] $\delta \text{ καλούμενος ἀναλυόμενος}$. τόπος, 'locus, i. e. quicquid aliqua mathematicarum parte comprehenditur: $\delta \text{ ἀστρονομούμενος τόπος}$, vi. 474, 3; $\delta \text{ ἀναλυόμενος τόπος}$, vii. 672, 4.' *Index Graecitatis*, Pappi, *Op. cit.*, voluminis iii., tomus ii., p. 114. ' $\delta \text{ ἀναλ. τόπ.}$, locus de resolutione, id est doctrina analytica.' *Ibid.* sub voce, ἀναλύνειν, p. 5. Compare what Marinus says on the same subject in his Commentary on the *Data* of Euclid:

'What is the value of the treatise about *Data* ?'

'The *datum* having been divided in a general way, and as far as is sufficient for the present need, the next point is to state the utility of treatment of

the subject. This also is one of those things which have their result in relation to something else. For the knowledge of this is necessary in the highest degree for τὸν ἀναλυόμενον τόπον as it is called; and how much value $\delta \text{ ἀναλ. τόπ.}$ has in mathematical science, and the kindred science of optics and music, has been defined elsewhere, and that analysis is the discovery of a proof, and that it helps us to the discovery of things similar, and that it is more important to possess the analytical faculty than to have many proofs of particular things.' *Euclidis Data*, ed. Cl. Hardy, p. 13. Cf. Pappi, *Op. cit.*, Appendix, p. 1275.

²⁸ Pappi, *ibid.* vii., vol. ii. p. 634.

order, which are contained in the τόπ. ἀναλ. He enumerates thirty-three books in all, amongst which we find 'five books of Aristaeus on Solid loci' (Ἀρισταίου τόπων στερεῶν πέντε): the remaining books, with the exception of two by Eratosthenes concerning *means* (περὶ μεσοτήτων δύο), were written by Euclid and Apollonius.²⁹

(b) ' [These plane problems then, are found in the τόπ. ἀναλ., and are set out first, with the exception of the *means* of Eratosthenes; for these come last. Next to plane problems order requires the consideration of solid problems. Now, they call solid problems, not only those which are proposed in solid figures, but also those which, not being capable of solution by plane loci, are solved by means of the three conic lines, and so it is necessary to write first concerning these. Five books of the *Elements of Conics* were first published by the elder Aristaeus, which were written in a compendious manner, inasmuch as those who took up the study of them were now able to follow him].³⁰

(c) 'Apollonius, completing Euclid's four books of conics, and adding four others, published eight volumes of conics. But Aristaeus, who wrote the five volumes of solid loci, which have come down to the present time, in continuation of the conics (Ἀρισταῖος δὲ, δς γέγραφε τὰ μέχρι τοῦ νῦν ἀναδιδόμενα στερεῶν τόπων τεύχη ἑ συνεχῇ τοῖς κωνικοῖς), called [as also did those before Apollonius] the first of the three conic lines, the section of the acute-angled cone; the second, the section of the right-angled cone; the third, the section of the obtuse-angled cone. But since in each of these three cones, according to the way in which it is cut, these three lines exist, Apollonius, as it appears, felt a difficulty as to why at all his predecessors distinguished

²⁹ *Ibid.*, p. 636.

³⁰ *Ibid.*, p. 672. 'τὰ μὲν—γεγραμμένα, interpolatori tribuit Hultsch.'

The spaced words are supplied in translation.

by name the section of an acute-angled cone, which might also be that of the right-angled and obtuse-angled cone; and, again, the section of the right-angled cone, which might also be that of the acute-angled and obtuse-angled cone; and the section of the obtuse-angled cone, which might also be that of the acute-angled and the right-angled cone. Wherefore, changing the names, he called that which had been named the section of the acute-angled cone, the ellipse; the section of the right-angled cone, the parabola; and the section of the obtuse-angled cone, the hyperbola—each from a certain peculiar property. For the rectangle applied to a certain straight line in the section of the acute-angled cone is deficient (ἐλλείπει) by a square; in the section of the obtuse-angled cone it is excessive (ὑπερβάλλει) by a square; finally, in the section of the right-angled cone the rectangle applied (παρὰβαλλόμενον) is neither deficient nor excessive.

‘[But this happened to Aristaeus, since he did not perceive that, according to a peculiar position of the plane cutting the cone, the three curves exist in each of the cones, which curves he named from the peculiarity of the cone. For if the cutting plane be drawn parallel to one side of the cone, one only of the three curves is generated, and that one always the same, which Aristaeus named the section of that so cut cone.]’³¹

(d) ‘But as to what he [Apollonius] says in the third book, that the locus with three or four lines has not been completed by Euclid—for neither he himself, nor anyone else, could [solve that locus] by those conical [theorems] only which had been proved up to the time of Euclid, as also he himself testifies, saying that it was not possible to complete it without those things which he was compelled to discuss

³¹ *Ibid.*, p. 672, l. 18–p. 674, l. 19.
‘l. 12. τοῦτο δ’ ἐπαθεν (scil. δ’ Ἀρι-
σταῖος)—l. 19. τομήν interpolatori tri-

buit Hultsch.’ Cf. Procli, *Comm.*, ed.
Friedlein, pp. 419, 420. See also
HERMATHENA, vol. v. p. 417.

before-hand—[as to this, Euclid, approving of Aristaeus as a worthy mathematician on account of the conics which he had handed down, and not being in haste, nor wishing to lay down anew the same treatment of these subjects (ὁ δὲ Εὐκλείδης ἀποδεχόμενος τὸν Ἀρισταῖον ἄξιον ὄντα ἐφ' οἷς ἤδη παραδεδώκει κωνικοῖς, καὶ μὴ φθάσας ἢ μὴ θελήσας ἐπικαταβάλλεσθαι τούτων τὴν αὐτὴν πραγματείαν)—for he was most kind and friendly to all those who were able to advance mathematics to any extent, as is right, and by no means disposed to cavil, but accurate, and no boaster like this man Apollonius—wrote as much as could be proved by his conics: sc. those of Aristaeus concerning that locus—not attributing any finality to his demonstration, for then it would be necessary to blame him, but, as it is, not at all; since Apollonius also himself, who left many things in his conics unfinished, is not brought to task for it. But he Apollonius has been able to add to that locus (τῷ τόπῳ) what was wanting, having been furnished with the ideas by the books already written by Euclid on the same locus (περὶ τοῦ τόπου), and having been for a long time a fellow-pupil of the disciples of Euclid in Alexandria, from which source he derived his habit of thought, which is not unscientific. Such is this locus with three or four lines, on which he plumes himself greatly, adding, that he knew that he owed thanks to him who first wrote about it.]³²

(e) We learn from Hypsicles that Aristaeus wrote a book on the *Comparison of the five regular solids*, and that it contained the theorem: 'The same circle circumscribes the pentagon of the dodecahedron and the triangle of the

³² *Ibid.*, p. 676, l. 19—p. 678, l. 15. 'l. 25. δ δὲ Εὐκλείδης—p. 678, l. 15, τοιοῦτός ἐστιν, scholiastae cuidam historiae quidem veterum mathematicorum non imperito, sed qui dicendi genere languido et inconcinno usus sit,

tribuit Hultsch,' *Ibid.* p. 677. As Hultsch says, 'the writer of this passage has employed a feeble and awkward manner of expression'; and it is difficult to see the exact meaning of it. The spaced words are supplied in translation.

icosahedron, these solids being inscribed in the same sphere'. Hypsicles says, further, that 'this theorem is also given by Apollonius in the second edition of his *Comparison of the dodecahedron with the icosahedron*,³³ which is: The surface of the dodecahedron is to the surface of the icosahedron as the dodecahedron itself is to the icosahedron; since the perpendiculars from the centre of the sphere to the pentagon of the dodecahedron and to the triangle of the icosahedron are the same'.³⁴

The foregoing extracts lead us to form a high opinion of Aristaeus, and to see that he was one of the most important geometers before Euclid. We have, therefore, great reason to regret the total loss of his writings.

In the passage (a) Aristaeus, Euclid, and Apollonius are named as the three authors on the doctrine of analysis. This passage shows, further, the value that was attached by the ancients to the five books of Aristaeus on *solid loci*, which was one of the works—indeed one of the higher works—included in the τόπ. ἀναλ. From the passage (b) it would appear that Aristaeus published also a work on the *elements of conics* in five books—an abridgment introductory to the study of solid loci. Of his work on *solid loci* it is, moreover, stated in (c): 'Αρισταῖος δέ, ὅς γέγραφε τὰ μέχρι τοῦ νῦν ἀναδιδόμενα στερεῶν τύπων τεύχη ἐσυνεχῇ τοῖς κωνικοῖς. This passage admits of several interpretations:—

1. That the work on solid loci was intended as an extension of the theory of conics;

2. Aristaeus first wrote the τύποι στερεοί in five books, and then, to facilitate the study of them, he wrote the κωνικὰ στοιχεῖα—an epitome—also in five books;

3. τοῖς κωνικοῖς might possibly refer to the conics of Euclid.

³³ πέπτε σχημάτων σύγκρισις.

book is in reality the work of Hyp-

³⁴ Euclid, Book xiv., Prop. 2. This

sicles.

We learn further from (c) that Aristaeus gave to the conic sections their original names, those by which they were known before Apollonius.³⁵ From (d) we learn that Euclid praised the conics of Aristaeus, whom he valued highly, and from the words ἐφ' οἷς ἤδη παραδεδῶκει κωνικοῖς, and φθάσας, it has been concluded that he was a predecessor, and probably a senior contemporary of Euclid.³⁶

We have seen that the passage (b) is regarded by Hultsch as an interpolation. In this Heiberg agrees, and infers thence that Aristaeus wrote only one work on the conic sections—τόποι στερεοί in five books—and holds that the generally received opinion that Aristaeus, besides the five books τόποι στερεοί, had written five more books κωνικὰ στοιχεῖα is not sufficiently well founded. He says: 'The only passage which can be adduced for it, Pappus vii., p. 672, 11: ἦν μὲν οὖν ἀναδεδομένα κωνικῶν στοιχείων πρότερον Ἀρισταίου τοῦ πρεσβυτέρου ἐ τεύχη, ὡς ἂν ἤδη δυνατοῖς οὖσι τοῖς ταῦτα παραλαμβάνουσιν ἐπιτομώτερον γεγραμμένα, is rightly rejected by Hultsch as not genuine,' and continues, 'It occurs in a perfectly wrong place where Apollonius περὶ νεύσεων is referred to, is objectionable in many respects in point of language, and contains nothing but what a reader of Pappus already would find in him; I believe, therefore, that we, in the words p. 672, 4-14, have a scholium which originally stood in the margin after p. 672, 16, and later fell into the text in a wrong place: the scholiast has then called the five books τόποι στερεοί, here incorrectly στοιχεῖα κωνικά. And even were the passage genuine (and only misplaced) the probability would be then that Pappus here by στοιχεῖα κωνικά had meant the τόποι'.³⁶

With this conclusion of Heiberg I cannot agree. In the first place, it should be observed that the passages of Pappus enclosed by Hultsch in [] are to be considered

³⁵ Cf. HERMATHENA, v., pp. 416, 417.

³⁶ J. L. Heiberg, *Studien über Euclid*, p. 85.

as interpolations for reasons of style, not of substance. The passage referred to was either written by Pappus himself (as Cantor and others assume), or it originated with an experienced commentator (scholiast), whose statements in other passages also are acknowledged as correct—or, to doubt which there is no occasion; or else these scholia contain remnants of the tradition of the mathematical school of Alexandria, and this tradition must be considered on the whole as correct, so long as the contrary is not proved.³⁷

In the next place, Heiberg is not correct in saying that 'it is the only passage which can be adduced for it.' The same statement is made expressly in the text of Pappus himself, a few lines lower down, in the passage quoted above: 'Αρισταῖος δέ, ὃς γέγραφε τὰ μέχρι τοῦ νῦν ἀναδιδόμενα στερεῶν τύπων τεύχη ἐσυνεχῇ τοῖς κωνικοῖς (p. 672, l. 20). Heiberg tries to obviate this objection by interpreting *συνεχῇ* as meaning: 'which stands in connexion with the doctrine of the conic sections—depends on it'.³⁸ In passage (d), moreover, the conics of Aristaeus are, I think, directly referred to in the words: διὰ τῶν ἐκείνου [Ἀρισταίου] κωνικῶν. Heiberg, further, says that the interpolation, or scholium, occurs in a perfectly wrong place; but, as he shows, it has to be placed only two lines lower. My view of the matter is that given above, p. 123, 2:—Aristaeus first wrote the *τύποι στερεοί* in five books, and then, to facilitate the study of them, he wrote the elements of Conics—an epitome—also in five books.

³⁷ It is certain that Pappus had a school. It may, therefore, be assumed that one—or perhaps several—of his pupils had taken notes of his lectures; and that these notes, arising thus from the oral exposition of Pappus himself, were worked out further by his pupils, and formed Commentaries, which were

then written on the margin, and subsequently received into the text, of the work which has come down to us as Πάππου συναγωγή. These Commentaries are easily recognized by their style, but as to their contents, they must be considered to be of almost equal authority with the undoubted text of Pappus.

The *Conics* of Aristaeus, no doubt, do not appear in the list of books contained in the so-called τόπος ἀναλυόμενος; neither do those of Euclid: they were both replaced by the *Conics* of Apollonius in eight books.

We have seen that Aristaeus wrote a work on the comparison of the five regular solids, and that it contained the theorem: The same circle circumscribes the pentagon of the dodecahedron and the triangle of the icosahedron, these solids being inscribed in the same sphere (*e*).

If we examine the proof of this theorem as given by Hypsicles, we see that it depends on the following theorems:—

1. If a regular pentagon be inscribed in a circle, the square on a side, together with the square on the line subtending two sides of the pentagon, is five times the square on the radius of the circle;

2. If the line subtending two sides of a regular pentagon be cut in extreme and mean ratio, the greater segment is the side of the pentagon. Euclid, xiii. 8;

3. The side of a regular decagon inscribed in a circle is the greater segment of the radius cut in extreme and mean ratio;

4. The square on the side of a regular pentagon inscribed in a circle is equal to the sum of the squares on the sides of the regular hexagon and decagon inscribed in the same circle. Euclid, xiii. 10;

5. If an equilateral triangle be inscribed in a circle, the square on the side is three times the square on the radius. Euclid, xiii. 12;

6. The square on the diameter of a sphere is three times the square on the side of the inscribed cube. Euclid, xiii. 15;

7. The line subtending two sides of the pentagon of a dodecahedron inscribed in a sphere is the side of the cube inscribed in the same sphere;

This follows from (2) taken with the corollary of xiii. 17:

If the side of the cube be cut in extreme and mean ratio, the greater segment is the side of the dodecahedron ;

8. The square on the diameter of a sphere is five times the square on the radius of the circle by means of which the icosahedron is described—*i. e.* the circle circumscribing the pentagon which forms the base of the five equilateral triangles having for common vertex any vertex of the icosahedron. Euclid, xiii. 16, and Corollary.

From the fact that 'the work of Aristaeus on the *Comparison of the regular solids* is the newest and last that treated, *before* Euclid, of this subject,' Bretschneider infers that 'the contents of the thirteenth book of the Elements is a recapitulation, at least partial, of the work of Aristaeus'.³⁸ This supposition of Bretschneider receives, I think, great confirmation from the above examination, which shows that the principal propositions in Book xiii. of the Elements are required for the demonstration, as given by Hypsicles, of the theorem of Aristaeus. This theorem, moreover, goes beyond what is contained in the Elements on this subject.

Further, one of the four problems treated of by Pappus in the third book of his *Collection* is the inscription in the sphere of the five regular polyhedra. M. Paul Tannery has thrown out the suggestion that it is probably taken from the *Comparison of the five figures* by Aristaeus the elder, but has given no reasons for his opinion.³⁹ In support of this conjecture I would put forward that :—

1. Pappus concludes his treatment of the subject by saying that 'from the construction it is evident that the same circle circumscribes the triangle of the icosahedron and the pentagon of the dodecahedron inscribed in the same sphere,'⁴⁰ which is the theorem of Aristaeus, and ex-

³⁸ *Geom. v. Eukl.*, p. 171.

³⁹ *L'Arithmétique des Grecs dans Pappus*, Mémoires de la Société des

Sciences Phys. et Nat. de Bourdeaux, 2^e Série. Tome iii., p. 351, 1880.

⁴⁰ Pappus, *Op. cit.*, vol. i., p. 162.

expressed, moreover, in nearly the same words as in Hypsicles ;

2. Pappus says in Book vii., as we have seen, p. 119, that the works in the τόπος ἀναλυόμενος—of which the τόποι στερεοί of Aristaeus is one—proceed by the method of analysis and synthesis ; and it is to be observed that the investigation in Pappus of the problem, ‘to inscribe the regular solids,’ is made by the analytical method ;⁴¹

3. Pappus, moreover, in Book v., treats of ‘the comparison of the five figures having equal surface, viz. the pyramid, cube, octahedron, dodecahedron and icosahedron,’ and says that he will do so, ‘not by the so-called analytic method, by which some of the ancients (τῶν παλαιῶν) found their proofs, but by the synthetic method arranged by him in a more perspicuous and shorter manner’—ἐξῆς δὲ τούτοις γράψομεν, ὡς ὑπεσχόμεθα, τὰς συγκρίσεις τῶν ἴσην ἐπιφάνειαν ἔχόντων πέντε σχημάτων, πυραμίδος τε καὶ κύβου καὶ ὀκταέδρου δωδεκαέδρου τε καὶ εἰκοσαέδρου, οὐ διὰ τῆς ἀναλυτικῆς λεγομένης θεωρίας, δι’ ἧς ἔνιοι τῶν παλαιῶν ἐποιοῦντο τὰς ἀποδείξεις, ἀλλὰ διὰ τῆς κατὰ σύνθεσιν ἀγωγῆς ἐπὶ τὸ σαφέστερον καὶ συντομώτερον ὑπ’ ἐμοῦ διεσκευασμένης.⁴²

The *theorem of Aristaeus* can be proved in the following simple manner :—

If a regular dodecahedron be inscribed in a sphere, the poles of its faces will be the vertices of a regular icosahedron inscribed in the same sphere ; and, conversely, the vertices of the dodecahedron will be the poles of the faces of the icosahedron. Now let *R* be the pole of the circle circumscribing the pentagon *ABCDE* of the dodecahedron, and let *S* and *T* be the poles of the circles circumscribing the two other pentagons of the dodecahedron which have the vertex *A* in common : then *A* will be the pole of the circle circumscribing the triangle *RST* of the icosahedron.

⁴¹ *Ibid.*, pp. 142–162.

⁴² *Ibid.*, pp. 410, 412.

Now, if the points R and A be joined to O , the centre of the sphere, the lines OR , OA so drawn will be at right angles to the planes $ABCDE$, and RST respectively: let them intersect these planes at the points P and Q respectively. Then the two right-angled triangles ORQ , OAP —having equal hypotenuses OR , OA , and common angle ROA —will be equal in every respect; therefore $OP = OQ$ and $AP = BQ$. But AP and BQ are the radii of the circles circumscribing the pentagon of the dodecahedron and the triangle of the icosahedron, and OP , OQ are the perpendiculars drawn from the centre to these two planes.

In the first part of this Paper (HERMATHENA, vol. iii., pp. 194 sq.), we saw that 'the Pythagoreans were much occupied with the construction of regular polygons and solids, which in their cosmology played an essential part as the fundamental forms of the elements of the universe':⁴³ and in the second part (HERMATHENA, vol. iv., pp. 213 sq.),

⁴³ These Pythagorean ideas—which were adopted by Plato *Πλάτων δὲ καὶ ἐν τοῖς πυθαγορίσει* (see HERMATHENA, vol. iv., p. 213, n. 75)—played such an important part in antiquity that they gave rise to the belief, related by Proclus, that Euclid 'proposed to himself the construction of the so-called Platonic bodies [the regular solids] as the final aim of his systematization of the Elements'. (See HERMATHENA, vol. iii., p. 164). This has been noticed by P. Ramus, who says: 'Nihil in antiqua geometria speciosius visum est quinque corporibus ordinatis, eorumque gratia geometriam ut ex Proclo initio dictum est, inventam esse veteres illi crediderunt'; but he adds: 'At in totis elementis nihil est istis argutiis ineptius et inutilius'.

It may be interesting to some of the readers of this Paper to know that

William Allman, M.D., Professor of Botany in the University of Dublin (1809–1844), and father of the writer, in a Memoir entitled: *An attempt to Illustrate a Mathematical Connexion between the Parts of Vegetables* (read before the Royal Society of London in the year 1811), put forward the hypothesis that the minute cells in the young shoots of vegetables are of the dodecahedral form in Dicotyledonous plants; and of the icosahedral form in Monocotyledonous plants; and that by means of this hypothesis he accounted for the prevalence of the number 5, and the exogenous growth in the former, and of the number 3, and the endogenous growth in the latter.

* (Petri Rami *Scholarum Mathematicarum*, Libri unus et triginta. Francofurti, 1599, p. 306.)

I pointed out a problem of high philosophical importance to the Pythagoreans, which, in my judgment, naturally arose from their cosmological speculations, and which required for its solution a knowledge of stereometry, and also the solution of the famous problem: *to find two mean proportionals between two given lines*. In the same part (p. 215) I indicated the men who first solved this problem, and laid the foundation of stereometry; in the two following parts (HERMATHENA, vol. v., pp. 190 *sq.*, pp. 212 *sq.*, and pp. 403 *sq.*) I examined their work; and finally in this portion we have seen that Aristaeus wrote works on the conic sections and on the regular solids, and, further, that he is specially mentioned as one of those who cultivated the analytic method—the method by the aid of which these discoveries were made, as stated in HERMATHENA, vol. iv., p. 215. Aristaeus may, therefore, be regarded as having continued and summed up the work, which, arising from the speculations of Philolaus, was carried on by his successors—Archytas, Eudoxus, and Menaechmus. These men were related to one another in succession as master and pupil, and it seemed to me important that the continuity of their work should not be broken in its presentation.

GEORGE J. ALLMAN.

QUEEN'S COLLEGE, GALWAY.

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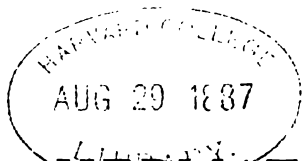


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HERMATHENA.

NOTES ON VOLUME II. OF TYRRELL'S 'CORRESPONDENCE OF CICERO.'

Att. IV. 2, 7.

Amicorum benignitas exhausta est in ea re, quae nihil habuit praeter dedecus, quod sensisti tu absens, praesentes, quorum studiis ego et copiis, si esset per meos defensores licitum, facile essem omnia consecutus.

TYRRELL translates, 'This you in your absence have seen to be true, and so have my friends here (in Rome), through whose zealous aid I might easily have gained all that I had lost.' Agreeing with him in retaining the MS. reading *praesens absentes*, I should prefer to translate, 'which you were as aware of from a distance, as it was understood on the spot (in Rome) by those whose zealous aid would easily have put me in possession of all I had lost': i.e. *quod sensisti tu praesens, (senserunt) praesentes (et), quorum.*

Q. Fr. II. 3, 5.

Sed idem Nerijs index edidit † ad allegatos†, Cn. Lentulum Vatiā et C. Cornelium.

Possibly *adalligatos*, 'were compromised as well.'

Fam. I. 5^b, 1.

Itaque Alexandrina causa, quae nobis adhuc integra est—nihil enim tibi detraxit senatus nisi id, quod per eandem religionem dari alteri non potest—uidetur ab illo plane esse deposita.

The new codex, which¹ Mr. Purser has examined for Tyrrell's edition, Harl. 2682, gives *detraxerit*. This appears to me certainly right: 'is sure not to take anything from you,' 'you may count upon losing nothing.' If it is right, it is just one of those small points of correctness which go so far in determining a MS. to be valuable. It is not without reason that Tyrrell remarks (p. 169), that Harl. 2682 is destined 'to throw a flood of light' on Cicero's Epistles. The excellent reading *cinneis* for *meis* of *M* in Fam. I. 9, 11 is only one of many cases in which the new codex is a revelation.

Att. IV. 7, 2.

De Metello οὐχ ὅσῃ φθιμένοισιν, sed tamen multis annis ciuis nemo erat mortuus quid quidem tibi nummi meo periculo sint.

Orelli and Tyrrell follow Malaspina in reading *nemo erat mortuus qui quidem . . . Tibi nummi meo periculo sint*. But, as Tyrrell well observes, such an *aposiopesis* seems highly problematical. I would read *nemo e. m. quin idem tibi* (sc. *expertus sit*), 'we must not triumph over the dead: still not a Roman had died for many years past but had the same tale to tell of Metellus as you,' *i.e.* that he had borrowed money from them, and never repaid it.

I had before thought it possible that the passage should be punctuated as follows—

De Metello οὐχ ὅσῃ φθιμένοισιν. Sed tamen m. a. c.

¹ Prof. Rühl was, I believe, the first to call the attention of scholars to this MS. in a letter addressed to Ritschl in

1874, and published in the *Rheinisches Museum*.

n. e. m. quin idem tibi (debuerit). 'As to Metellus, we must respect the dead and say nothing bad of him. *After all*, not one Roman for many years before M.'s decease had died without being also in your debt.' Corn. Nepos speaks of the numerous cases in which Atticus advanced money, often with no prospect of repayment: Vit. Attici viii. ix. xi. But I have not been able to discover any case where *sed tamen* is so used.

Att. IV. 8^a, 1.

Scito, Antium Buthrotum esse Romae, ut Corcyrae illud tuum. Nihil quietius, nihil alsius, nihil amoenius. εἴη μοι τοιοῦτος φίλος οἶκος.

So I would write this passage, translating 'I can assure you that Antium is Buthrotum in Rome, much as your Buthrotum at Corcyra,' i.e. *much the same* as your B. at Corcyra. The Greek letters, as given in Orelli's App. Crit., p. 452, vol. iii. (ed. 1845), point, I fancy, rather to τοιοῦτος than οὔτος.

Ib. 2.

Postea uero quam Tyrannio mihi libros disposuit, mens addita uidetur meis aedibus: qua quidem in re mirifica opera Dionysii et Menophili tui fuit. Nihil uenustius quam illa tua pegmata: postquam misit libros illustrarunt ualde.

This is the reading of *M*, and it may be right. If it is, the nom. to *misit* will perhaps be Menophilus, 'nothing can be prettier than these book-cases of yours. As soon as he sent them in, they set off my books extraordinarily.' In any case, I think *ualde* is genuine, and ought not to be changed to *vale*. The *et scribas* which follows in *M* may be *exscribas*: 'I wish you would copy any notes you have made about the gladiatorial shows.'

Att. IV. 11, 2.

Ego mecum praeter Dionysium eduxi neminem, nec metuo tamen ne mihi sermo desit: abs te opere delector.

Madvig has a very elaborate conj. here; *ita ab isto puero delector*. I cannot believe that Cic. would ever have spoken in this way of the erudite Greek to whom he committed the care of his son; elsewhere he calls him *hominem* (Att. VI. 1, 13), *docto homine et amico* (Att. VII. 18, 3), *frugi hominem ac ne libertinum laudare uidear, plane uirum bonum* (Att. VII. 4, 1). Perhaps for *abs* we should write *absque*: 'to say nothing of you (i.e. of your letters), I find a pleasure in working,' i.e. 'in the literary employment I am pursuing here.'

Fam. v. 8, 1.

Quantum †ad meum studium exstiterit dignitatis tuae uel tuendae uel etiam augendae, non dubito quin ad te omnes tui scripserint.

Tyrrell accepts Klotz' conj. *Quantum a. d.*, supposing the number and what followed to have fallen out. Possibly, *ad* is a mistake, not for *a. d.* but for *Id.*, i.e. *Idibus*.

Fam. VII. 5, 2.

M †itfuium quem mihi commendas, uel regem Galliae faciam, uel hunc Leptae delega si uis.

Mr. Marshall, *Cruces and Criticisms* (Elliot Stock, 1886), would write *M. Fonteium*. Surely this is against all palæographical probability. When will critics begin to recognize this science as the only real basis of emendation? I suggest that the name may be *fuf^uium* (Catull. LIV. 5); the *it* was written above the line, perhaps because originally omitted, and then wrongly transferred to the beginning of the word.

Att. IV. 16, 7.

Britannici belli exitus expectatur. Constat enim aditus insulae esse †miratos mirificis molibus.

Tyrrell conj. *muratos*: which I believe to be certainly right, and of which rare word a duplicate is perhaps to be traced in Cir. 105, *Stat Megara Alcathoi quondam mutata labore*, where *murata* is much closer to the MSS. than the received emendation *munita*. The wall of Megara, in the legend, was built by Phœbus and Alcathous conjointly.

Att. IV. 17, 1.

Quae (litterae) tantum habent mysteriorum, ut eas ne librariis quidem fere committamus, lepidum quo excidat.

Perhaps *lepidum quo ne excidat*, to prevent some witty remark *being lost*. Such I believe to be the meaning, against Tyrrell's view, who, writing *lepidum quid ne quo excidat*, translates 'lest some joke of mine shall get wind in some direction.' *Excidere*, in the sense of falling out, being lost, or forgotten, is more common in Cic. than in the other indubitable meaning of 'oozing out,' 'becoming known.'

Att. IV. 18; 2 (IV. 16, 10, Orelli).

Miram securitatem uidebis, cuius plurimae mehercule partes sunt in tuo reditu. Nemo enim ΔEPPIC in terris est mihi tam consentientibus sensibus.

This passage must be compared with another written seemingly much about the same time. Att. IV. 19, 1 (IV. 17, 1, Orelli) *O expectatas mihi tuas litteras! o gratum aduentum! o constantiam promissi et fidem miram! o nauigationem amandam! quam mehercule ego ualde timebam, recordans superioris tuae transmissionis ΔEPPIS.*

We may feel sure that the occurrence of the word ΔΕΠΠΙC in these two letters is intended. The explanation given in the latter passage is that Atticus had used skins in a former journey to or from Buthrotum to keep out the cold.

These δερρεῖς seems to have struck Cicero's fancy. I imagine him to pun upon the word, and to have written, I will not say the following, but something like it:—

Nemo enim in δέρρις nec in terris est mihi tam consentientibus sensibus, 'I cannot find a man so completely to my liking (as you) under any hide or in any side of the world.' But what case is *in δέρρις*? It ought to be ablative to symmetrize with *in terris*: and δέρρα as a fem. noun is quoted in Dindorf's Stephanus from the *Poliorcetica* of Apollodorus, a writer of the time of Hadrian; I have myself found it in Alciphron III. 36, δεκάδας τινὰς καὶ φάλαγγας ὀνομάζων εἶτα σαρίσσας καὶ καταπέλτας καὶ δέρρας (where Bergler against MSS. conj. γέρρα); or again, it might conceivably represent δερρλοῖς *derriis*, the two *r*'s coalescing in sound, as they so often do in the writing of the earliest MSS. But since in the second passage it is accus. plur. δέρρεῖς, it seems more likely that *in δερρεῖς* was what Cic. meant, an accus. which would be quite intelligible to a Roman familiar with the vulgar language of his country (*in mentem est, in memoriam habeas, in Tusculanum, in provinciam esse*, &c., are even classical: Dräger I., p. 617), and which would become explicable, as a paronomasia, from the subjoined *in terris*.

Att. IV. 19, 1 (IV. 17, 1, Orelli.)

Sed, nisi fallor, citius te quam scribis uidebo. Credo enim te putasse tuas mulieres in Apulia esse, quod cum secus erit, quid te Apulia moretur? Nam Vestorio dandi sunt dies et ille latinas †ΥΤΙΚΙCΜΟC ex intervallo regustandus. Quin tu huc aduolas, et inuisis illius nostrae reipublicae †germanae.

There are two words in this vexed passage which are corrupt, YTIKICMOC and *germanae*. Both require emendation; but by some unfortunate accident, a very questionable correction of the former has found universal acceptance; while a most admirable restoration of the latter, dating from the time of Poliziano, has been generally rejected. I shall begin with this first. I have printed above *germanae*, the reading of *M*; but Bosius, in his note on the passage, quotes two variants: 'Tornaesianus, *germa*; Decurtatus, *gerina*.' Now Pius, cited in Orelli's note, states: 'Legebat Ang. Politianus, ex prisco, ut praetendebat, exemplari γεράνδρυν.' Lambinus accepted this, and both sense and palæography strongly confirm it. Sense: for it explains, what is otherwise obscure, *illius*, 'why don't you come and see the rotten remains of our old tree of state?'; palæography: for *gerina* and *gerandria* γεράνδρια (for so I would modify Poliziano's correction) are sufficiently close to each other to make it probable that the former is the truncated remnant of the latter. Hesych. τὰ παλαιὰ δένδρα γεράνδρνα. That the word was used metaphorically is shown in Dindorf's Stephanus, s.v. He cites Aristaen. II. 1: δίδου τοῖς σοῖς ὀπωρώναις τὴν ὥραν τρυγᾶν μετ' ὀλίγον ἔσται γεράνδρυν. Dindorf also observes that the word is often written in MSS. with an ι, γεράνδριον. This leads me backwards to the other corrupt word: for which the accepted reading since the beginning of cent. xvi. is ἀττικισμός. Such is not the conclusion of a student of palæography. By all ordinary rules, YTIKICMOC should represent εὐτυκισμός or εὐτυχισμός. It seems possible that some lurking allusion to the freedman whom Atticus had recently enfranchised under the new name of T. Caecilius Eutychides (Att. IV. 15, 1) is intended; more probably, Cic. means a reference to a character particularly familiar to Roman play-goers (Rosc. Am. xvi. 47: *cum . . . nemo magis uobis notus futurus sit quam est hic Eutychus*),

under the name of Eutychus. Eutychus was one of two brothers whom the comic writer Caecilius introduced as living an exiled and retired life in the country, while his more favoured brother Chaerestratus was allowed to share his father's society in town (Rosc. Am. xvi. 46). The whole passage, then, may be paraphrased: 'you have no cause to stay in Apulia, as your female relations are not there. You must give up some few days to the society of Vestorius (a *faenerator* at Puteoli), and after a period of absence must taste once more the homely life of the rustic Eutychus in Caecilius' Latin version of the Greek comedy'; for such, I suppose, would be the meaning of *ille Latinus*; the *ille* pointing to an allusion which, as Cic. tells us in the passage above quoted from the *pro Rosc. Amerino*, would be familiar and intelligible to most Romans of the time. Then, after thus advising Atticus to submit to a short period of *rustication*, he turns suddenly, *Quin tu huc aduolas*, 'what am I saying? You must hasten to Rome directly, and see how we are getting on in this rotten old country, with our constitution quite on its last legs.'

[I add, as a contribution to the question between ἀττικισμὸς and εὐτυχισμὸς the following highly illustrative passages of Alciphron. II. 4. 4. Glycera writes to the comic poet Menander: δηλὸς ἦν ὁ βασιλεὺς τὰ μὰ πεπυσμένος, ὡς ἔοικε, περὶ σοῦ, καὶ ἄτρεμα δι' ὑπονοιῶν Αἰγυπτίους θέλων ἀττικισμοῖς σε διατρωθᾶζειν, where the *Aegyptian atticisms* form, no doubt, a very close parallel to *Latinus atticismus*. Again, Alc. II. 4. 1: καὶ γὰρ παρὰ σοὶ ἐδείπνησε πολλάκις καὶ ἐπήνεις αὐτῆς τὸν ἐπιχώριον ἀττικισμόν, where the *native atticism* of a woman born in Attic territory is no doubt intended to contrast with the *hybrid* atticism of the Egyptian king. But these instances do not, to my mind, outweigh the palæographical objection as stated above to this reading.]

Q. Fr. III. 5 and 6, 7.

Quattuor tragoedias xvi. diebus absoluisse cum scribas, tu quidquam ab alio mutuaris? et †ΠΑΕΟC quaeris, cum Electram et Trodam scripseris?

So *M.* I believe this to be a learned mythological allusion to the *varying number of the Pleiads*, which, according as Electra, the least conspicuous member of the group, was visible or not were reckoned at seven or six alternately. The legend was that Electra, the mother of Dardanus by Jupiter, was so affected by the loss of her son and the destruction of Troy, that she withdrew from the company of her sister Pleiads. Hygin. 192, Schmidt:—*Caeterae sorores* (he has been speaking of the Hyads) *postea luctu consumptae sidera factae sunt, et quia plures erant Pleiades dictae. Nonnulli existimant ita nominatas quia inter se coniunctae (quod est πλῆσιον) adeo autem confertae sunt, ut uix numerentur; nec unquam ullius oculis certum est sex an septem existimentur. Earum nomina haec sunt: Electra, Alcyone, Celaeno, Merope, Sterope, Taygeta, et Maia. Ex quibus Electram negant apparere propter Dardanum amissum Troiamque sibi abreptam.*

CIC. Aratea 27 sqq.

*At propter laeuum genus omni ex parte locatas
Paruas Vergilias tenui cum luce uidebis.
Hae septem uulgo perhibentur more uetusto
Stellae, cernuntur uero sex undique paruae.
At non interiisse putari conuenit unam,
Sed frustra temere a uulgo ratione sine ulla
Septem dicier, ut ueteres statuere poetae,
Aeterno cunctas sane qui nomine signant,
Alcyone Meropeque, Celaeno Taygeteque,
Electra Steropeque, simul sanctissima Maia.*

I would therefore write the passage—

Et πλείους quaeris cum Electram et Troadam scripseris? 'And after writing an *Electra* and a *Trojan woman* ask for one *Pleiad* more?' i.e. are not contented with the number of tragedies you have written, but, after your *Electra* and *Troas* have proved the existence of the last member of the group, still look for the missing *Pleiad*?

Quintus Cicero had written an *Electra* and *Troas*, in which he seems to have described two stages of the tragic story of *Electra*; the latter describing her as a Trojan woman, mourning the downfall of Troy and the extinction of her son Dardanus. 'After thus proving your familiarity with the seventh *Pleiad*, how can you,' says Cicero, 'talk as if she were out of sight? Yet this is what you do when you complain that the number of your tragedies is still incomplete.'

I write *Troadam*, as this would be the earlier Latinized form of the Greek accus. *Troada*. Neue. Formenl. I. p. 333, gives many similar instances: *lampadam*, *hebdomadā*, *Palladam*, *Iliadam*, *Briseidam*, *Chryseidam*, *Amazonam*, *Syringam*, *Tritonidam*.

Ad. Q. Fr. III. 9. 9.

Ciceronem et ut rogas amo et ut meretur et debeo. Dimitto autem a me, et ut a magistris ne abducam et quod mater Porcia non discedit, sine qua edacitatem pueri pertimesco.

All that is needed to make this quite intelligible is to insert *a* before *Porcia*. Cicero tells his brother Quintus that he does not keep his nephew, the younger Quintus, much about him, that he may have no excuse for not neglecting his lessons, and because his mother is so much with *Porcia* (sister of M. Cato, and wife of L. Domitius Ahenobarbus), that she cannot look after him and prevent his over-eating himself.

Ad Q. Fr. III. 9, 6, 7.

*Quod me hortaris, ut absolvam, habeo absolutum suaue, mihi quidem uti uidetur, ĩeros ad Caesarem; sed quaero locupletem tabellarium, ne accidat quod Erigone tue, cui soli Caesare imperatore iter ex Gallia tutum non fuit. Quid si canem tam bonum non haberem? * * deturbem aedificium, quod quidem mihi quotidie magis placet, in primisque inferior porticus et eius conclauia fiunt recte.*

Tyrrell follows Orelli in printing for *canem tam* an early conj. *caementum*, connecting it with the words following, and reading *deturbarem*. I doubt this, for the following reasons:—

1. After speaking of Erigone, what can be more natural than to mention her 'good dog'? And Maera was emphatically a good dog; for not only did she by her faithful watch discover to Erigone where her murdered father Icarus lay, but when Erigone, in grief at his loss, hung herself on Mount Hymettus, Maera died with a howl beneath her feet.

Aelian., H. A. VII. 28, says the Delphian oracle ordered sacrifice to be made to Maera, ὅτι ἄρα δι' ὑπερβολὴν εὐνοίας τῆς πρὸς τὴν δέσποιναν βιώναι μετ' αὐτὴν οὐκ ἔγνω. παλζει δὲ Εὐριπίδης λέγων

χρηστοῖσι δούλοις συμφορὰ τὰ δεσποτῶν
κακῶς πίτνοντα καὶ φρενῶν ἀνθάπτεται

'for where,' he asks, 'is a man found to have died over his master's body, albeit a dog did so'?

2. Erigone's dog was proverbial. Martial, XI. 69, 3, 4, speaking of *Lydia*, a remarkably faithful dog, says:

*Lydia dicebar domino fidissima Dextro,
Qui non Erigones mallet habere canem.*

3. The connexion, then, is not very hard to follow. 'I am afraid of trusting my poem to any carrier, lest it should be intercepted on the way, like your *Erigone*, the only passenger that has been molested on its journey since Caesar had command of Gaul. Possibly, too, I might not have a guardian-dog, like *Erigone*; and then the chance of my poem escaping safely would be less even than yours.'

The joke is flat, no doubt; but I fancy that this is true of many others, not only in Cic.'s letters, but in his finished speeches. What can be flatter than the well-known *Guttam aspergit huic Bulbo* in the *Pro Cluentio*?

The following is not included in Tyrrell's second volume.

Att. VII. 7, 1.

'*Dionysius, uir optimus, ut mihi quoque est perspectus et doctissimus, tuique amantissimus, Romam uenit xv. Kal. Ian. et litteras a te mihi reddidit.*' *Tot enim uerba sunt de Dionysio in epistola tua. Illud †putato non adscribis 'et tibi gratias agit.'*

Mr. Marshall, in his *Cruces and Criticisms*, to which I again call attention, as containing some ingenious suggestions, conj. *puta tu*. I cannot see how *puta* can here have any place: may not Cic. have written *illud, ut puto, non adscribis*? 'This, I believe I am right in saying, you do not add': i.e. a rather more serious *puto*, as Victorius conjectured.

ROBINSON ELLIS.

GREEK INTERJECTIONS.

THERE is a fixed idea that nearly all Greek interjections may be translated *alas*,¹ if the circumstances are unpleasant; but an accurate observer will see that they are always used to suit the special case, and that their meaning is best indicated by the context, as will appear from the following:—

1. *φεῦ* is relative to smell: *Agamemnon* 1307–1309 is the *locus classicus*:

ΚΛ. *φεῦ, φεῦ;*

ΧΟ. *τί τοῦτ' ἔφευξας;*

ΚΛ. *φόνον δόμοι πνέουσιν αἱματοσταγῇ,*

she foresmells the blood.

2. *ὄτοτοῖ* is explained by the same scene:

ΚΛ. *ὄτοτοτοῖ ποποῖ Δᾶ.*

Ἄπολλον, Ἄπολλον.

ΧΟ. *τί ταῦτ' ἀνωτότυνας ἀμφὶ Λοξίου,*

οὐ γὰρ τοιοῦτος ὥστε θρηνητοῦ τυχεῖν.

Ag. 1072–5.

It is the clucking noise expressive of surprise and grief often heard in country places in Ireland. I am not aware if it is used in England or Scotland.

3. *ἔ ἔ* signifies a shudder, expressed by the sound of drawing in the breath, as at the sight of a cut or wound.

¹ *Alas* = *hélas* = *hé!* *lassus!*

It is evoked by the blinded eyes of Œdipus, doubtlessly horribly represented by the mask.—*O. C.* 149.

I remember a protest in the newspapers against the realism of bringing in Kent with a white bandage round his eyes, spotted with blood.

4. ὀοώ, or some such variant of ὦ, represents the feelings caused by the mention of Laius, *ib.* 220, and then by the idea of his son's presence. It would be a faint shivering sob, like that caused by the first fall of a very cold shower-bath.

5. ἰὼ is *what, ho!*

ἰὼ πᾶς λεὼς, ἰὼ γᾶς πρόμοι.

O. C. 884.

help, ho! Hence ἰὼ is used in cases of taunts or appeals.

6. ἰοὺ is the cry raised on finding the game—*view hollo*—

ἰοὺ, ἰοὺ, κινδυνεύομεν ἔχειν τι ἔχρος, καί μοι δοκεῖ οὐ πάνυ τι ἐκφευγέεισθαι ἡμᾶς.—*Rep.* 432 d.

Hence it is used by Jocasta: *It is all known now—there it is.*—*O. T.* 1071; and of the Beacon: *Ag.* 25, *there it goes, that will do me*, rightly given by Browning *halloo*: the remark of the Scholiast, *Ar. Pac.* 317, περισπᾶται, has nothing to do with the general sense, *a find* good or bad. The watchman first addresses the beacon in thankfulness, and then cries ἰοῦ, ἰοῦ, *a good thing for me*. Cromwell at Dunbar, and Wellington at Salamanca, would, if Greeks, have cried ἰοῦ, ἰοῦ.

7. ἔα, ἔα—made by drawing in the breath, then slowly expelling it, as at the long peal of thunder,

διαπρύσιος ὄτοβος.

O. C. 1478.

8. ἄ ἄ—suppressed indignation—

ἄ ἄ

τί σὺ πρὸς μελάνθοις;

Alc. 28, 9.

ἄ ἄ ἰδὸν ἰδού' ἄπεχε τᾶς βόδς

τὸν ταῦρον.

Ag. 1125, 6.

9. παπαῖ, and perhaps ποποῖ, express the tremulous motion of the lips, as is proved by

παπαῖ

ἀπαπαπαῖ παπαπαπαπαπαπαπαῖ.

Phil. 745, 6.

Lycophron uses ποποῖ as a noun, and his authority ought not to be too hastily set aside: his merits as a poet have nothing to do with his accuracy as an antiquarian; and with the dubious exception of τάρροθος (1346), which may be defended, I think no one has shown that he has coined simple words, though he may have made new compounds.

10. ἰοφ ὄμ (Aesch. *Supp.* 828). I see no reason why the testimony of the Scholiast, and Eustathius, 900-27, that it represents the expulsion of the breath in expectoration, and the following noise in the throat *hem*, should be rejected, except that scholars far gone with emendation are evidence-proof.

Electra 825-845 is at once a dialogue, and an exercise, in interjections.

XO. ποῦ ποτε κεραυνοὶ Διὸς, ἧ ποῦ φαέθων Ἄλιος, εἰ ταῦτ'

ἐφορῶντες

κρύπτουσιν ἔκηλοι;

ΗΛ. ἔ ἔ, αἰαῖ.

XO. ὦ παῖ, τί δακρύεις;

ΗΛ. φεῦ.

XO. μηδὲν μέγ' αὔσης.

HA. ἀπολείς.

XO. πῶς;

HA. εἰ τῶν φανερώς οἰχομένων εἰς Ἀΐδαν ἐλπίδ' ὑποίσεις,
κατ' ἐμοῦ τακομένας μᾶλλον ἐπεμβάσει.

XO. οἶδα γὰρ ἄνακτ' Ἀμφιάρεων χρυσοδέτοις ἔρκεσι
κρυφθέντα γυναικῶν
καὶ νῦν ὑπὸ γαίας

HA. ἔ· ἔ· ἰώ.

XO. πάμπνυχος ἀνάσσει.

HA. φεῦ.

XO. φεῦ δῆτ'· ὅλοα γὰρ

HA. ἐδάμην.

XO. ναί.

The following is not a translation, but an explanation :—

Ch. Where is the justice of heaven !

El. Gasps and wails—*vagit*; as to αἰαῖ: cf. αἰ-as αἰάζω.

Ch. Why weep ye ?

El. I am disgusted: it is a shame.

Ch. Be not too proud: *be humble.*

El. You will kill me: *occidis, enecas*; i.e. *you weary me*;
prythee, peace!

Ch. How so? *Why?*

El. By mentioning the dead.

Ch. Yet I know one under ground—

El. Convulsively, I call on him for help.

Ch. There is he the King with all his soul.

El. That again is revolting—*O the pity o' it.*

Ch. You are right, because the murderess

El. Was brought low.

Ch. So it was.

T. MAGUIRE.

TRANSLATION AS A FINE ART.

THE future historian of scholarship in England will point to the last twenty years or so as the epoch when translation first began to be cultivated as an art. Of course this is due in no small measure to the fact that till quite lately commentaries on the ancient writers were nearly always in Latin. But for some time after English commentaries became the rule, it was customary to make translation a mere vehicle for the elucidation of the construction. Commentators absolutely neglected all attempts to reproduce the style and spirit of the original. Students, on making their first acquaintance with the masterpieces of Greek and Latin poetry, could not help regarding Sophocles and Virgil as bald, frigid, and stilted; and when they heard at lecture elaborate eulogies of the writers whom they secretly despised, they, no doubt, felt towards the lecturer as the northern farmer felt towards the parson after the sermon, when he summed up his ecclesiastical views in the words,

‘I thowt a said whot a owt to ’a said, and I coomed awaäy.’

It was not that the old school of commentators were incapable of turning dignified Greek or Latin into dignified English. Many of them excelled in the closely kindred art of translation from English into Latin and Greek. He who can render English into perfect Latin or Greek could, probably, translate worthily from Greek or Latin into English. The old school thought it unscholarly to go beyond the letter that killeth, even as Hamlet in his early

youth held it 'a baseness to write fair.' Mr. Paley's admirable versions into Greek and Latin verse show that he could have achieved the humbler task of translating Pindar into adequate English, if he had recognised the truth that the translator's art should aim at something beyond the mere setting forth of the bare construction of the text.

But, happily for the learners of the present day, bald translation is no longer in fashion. Every editor at least aims at making his versions not only accurate but adequate. This is due in great measure to the admirable example set by Professor Jebb, whose translations of Sophocles are perfect models, and constitute a standard for subsequent editors. Though not in metrical language, they are really genuine poetry, and bring the English reader as near to Sophocles as he can possibly hope to come without acquiring a knowledge of the language in which Sophocles wrote. A like tribute may be paid to Mr. Verrall's recent edition of the *Seven against Thebes*; and all modern editions of any pretensions at least show signs of an awakened attention to the importance of preserving in translation the spirit that giveth life.

The importance of this last step taken by scholarship will more clearly appear when we consider how closely it is connected with a question which is now agitating all who are interested in education—the question how far the teaching of English and of Classics can, or ought to, go hand in hand. The Greek and Latin poets can be fittingly presented in English only by one whose mind is stored with the riches of English literature. The teacher who aims at adequate translation, and enjoins it on his pupils, constantly finds that the thought of the ancient poet can be rightly represented only in the words of his modern successor in the gay art. To give only two instances, can one go nearer than Shakspeare's 'withering on the

virgin thorn' to express the real meaning of the pathetic verse—

Solane perpetua maerens carpere iuventa ?

And in Pindar, Isthm. II. 5,

ρίμφα . . . ἐτόξευον μελιγάρνας ὕμνους,

can we feel that we have hit on the word for *ρίμφα* till we have thought of Tennyson's

'*Lightly* turns to thoughts of love' ?

It is his delicate feeling for language which makes Professor Jebb's translations of Sophocles so admirable. His renderings are seldom, if ever, actually taken from the English poets, but they invariably give evidence of a long and loving study of English literature. I will give a few instances of some of his happy translations in the *Oedipus Rex*, choosing not the most striking passages, where a translator would be put on his mettle, but chiefly places where there lurks a hidden difficulty which is generally avoided or neglected; or where a so-called literal version would actually miss the meaning of the Greek. That they are all literal in the truest—the only true—sense of the word will be evident to the judicious. That translation only is truly a translation which gives the true equivalent of the thought of the original.

191 φλέγει με περιβόατος ἀντιάζων,
 'wraps me in the flame of his onset.'

379 μέλεος μελέφ ποδὶ χηρεύων,
 'forlorn on his joyless path.'

545 μανθάνειν δ' ἐγὼ κακὸς
 σοῦ· δυσμενὴ γὰρ καὶ βαρύν σ' εὖρηκ' ἐμοί,

'but I have a poor wit for thy lessons since I have found thee my malignant foe.'

561 μακροὶ παλαιοί τ' ἂν μετρηθεῖεν χρόνοι,
 'the count of years would run far into the past.'

608 γνώμη δ' ἀδήλω μὴ με χωρὶς αἰτιῶ,
 'but make me not guilty in a corner on unproved surmise.'

690 ἄπορον ἐπὶ φρόνιμα,
 'bankrupt in sane counsel.'

2184 φύς τ' ἀφ' ὧν οὐ χρῆν, ξὺν οἷς τ'
 οὐ χρῆν ὁμιλῶν, οὗς τέ μ' οὐκ ἔδει κτανῶν
 'accursed in birth, accursed in wedlock, accursed in the shed-
 ding of blood.'

1191 τοσοῦτον ὅσον δοκεῖν
 καὶ δέξαντ' ἀποκλίνειν,
 'just the seeming, and, after the semblance, a falling away.'

1388 οὐκ ἂν ἐσχόμην
 τὸ μὴ 'ποκληῆσαι τοῦμὸν ἄθλιον δέμας,
 'I had not spared to make a fast prison of this wretched
 frame.'

Ten times as many felicities might be adduced from this play and from his *Edipus Coloneus*; but space forbids me to multiply examples beyond two or three more from the *Ed. Col.*—

7 στέργειν γὰρ αἱ πάθει με χῶ χρόνος ξυνῶν
 μακρὸς διδάσκει καὶ τὸ γενναῖον τρίτον,

'for patience is the lesson of suffering and of the years in our long fellowship, and, lastly, of a noble mind.'

'Thirdly' would have been bald in English, though it is not in Greek; hence the translator, with nice taste, writes 'lastly.'

22 χρόνου μὲν οὐνεκ' οὐ μαθεῖν με δεῖ τόδε,

'if time can teach I need not to learn that.'

132 εὐφάμον στόμα φροντίδος ἰάντες,

'moving our lips, without sound or word, in still devotion.'

1697 πόθος τοι καὶ κακῶν ἄρ' ἦν τις,

'Ah, so care past can seem lost joy!'

1745 τοτὲ μὲν ἄπορα τοτὲ δ' ὑπερθεν,'

'desperate then, and now more cruel than despair.'

The two last quotations illustrate the fact that a good translation is often the best comment. Half a page of talk about the meaning of a passage does not tell so much as one line of perfect rendering. But it is far easier to write the half page *about* the meaning. Of course the merits of a version like Professor Jebb's disclose themselves only to those who believe that Sophocles used language skilfully, and who have ears to hear when a word rings true. Many would fail to observe—some would fail even to recognise on its being pointed out to them—the eminent fitness of the word *blithe*, a word standing midway between the too objective *bright* and the too subjective *glad*, in the rendering of the last verses of the *Parodus* of the *Œdipus Rex*:—

'And I call him whose locks are bound with gold, who is named with the name of this land, ruddy Bacchus to whom Bacchants cry, the comrade of the Maenads, to draw near with the blaze of his blithe torch (φλέγοντ' ἀγλαῶπι πεύκη) our ally against the god unhonoured among gods.'

Hence I have not pointed out wherein lies the beauty of the renderings above quoted. Comment of this sort

would be superfluous to one class of readers, and unmeaning to another.

Professor Jebb's editions are in everyone's hands. I have assumed that his splendid renderings of the Choral Odes, and of the other most striking portions of the dramas, are familiar to my readers; and I have contented myself with pointing to subtle instances of taste and skill, which might escape the notice of a not very careful student. Mr. Verrall's very able edition of the *Seven against Thebes* has only quite recently appeared, so I shall perhaps best recommend it to readers of HERMATHENA by giving a couple of longer extracts from his admirable translation, and referring them to their texts for the Greek:—

VV. 714-750:

He is no native, that he should divide the inheritance—this Chalyb from distant Scythia, this cruel steel, whose award shall cost them dear, when he allots them for their dwelling-place so much land as they may hold even dead, disproportioned of yon wide plains.

But when by kindred hands kinsmen are slain, and the dust of the deep hath drunk the thick red gore, who can give cleansing, who wash away their stain? Oh suffering house, where the young are confounded in sins of long ago!

Aye, long ago was done the transgression whereof I speak (swiftly punished, yet to the third generation persisting), when Laius, despite Apollo's command, spoken thrice in his oracle of Pytho at earth's centre, that to save his town he should die without offspring, nevertheless, his prudence vanquished by her he loved, begat death to himself, even Oedipus the parricide; who lived to sow with a seed of blood a sacred field, the mother in whom he was made. Folly and frenzy it was that forced together the wedded pair!

And so as it were a sea of ill, one wave rising still as another fell, hath rolled the triple-crested billow, whose seething waters

threaten the very helm of all; while there is but a narrow defence between, the broadness of a wall. And I fear lest with our princes our country also should go down.

833-933:

[*Antigone and Ismene are seen approaching, with a procession bearing the bodies of the brothers.*]

Now, plain to be seen, that which was told us is before our eyes. Oh princely pair, oh hapless hopes, oh murdered and murdering, oh deadly and death-doomed—ah for words yet! What need for more than these, 'Sorrow of sorrows for hearth and for home!'

But oh, with the wind of sighs, and with that speeding stroke of hand upon brow, which plies without ceasing over Acheron, row on that ship dark of sail, that unblest missionary, whereon never Apollo sets foot nor sunlight falls, to the bourn of all, to the unseen shore!

But now, see, they come, Antigone and Ismene, to do their bitter office, the dirge of their brethren. Not with different grief, I trow, for different desert, will their yearning bosoms utter their plaint. Our just part it is, ere their voices be heard, to raise the hideous hymn of the Avengeress and sing the cruel triumph of Death.

(*The procession begins to enter.*)

Ah sisters most unhappy of all who bind their robes with the belt, I weep, I wail, nor is there falsehood in my heart's most true lament.

Ah (*speaking to the dead*) ye hard of heart, whom love could not bend, nor hardship break, have ye fought your miserable way to your fathers' house?

Aye, miserable they, who have destroyed the house to win a miserable death.

Ah, thou who would'st make a breach upon thy home, and thou, who to thy hurt would'st be sole lord therein, ye are reconciled now by help of steel. Too true fulfilment the awful Fury of Oedipus your father hath made.

See the wounds in their left sides, those sides which lay in the womb together! Alas, for their fate, for their cursed doom of mutual death!

A deadly blow it is to heart and to home—a deadly blow—which hath smitten them, divided¹ by unspeakable fury and the fate which their sire pronounced.

The city's self thrills with a sigh, the stone walls moan, and the land lovingly, all things which were the cause, the sad cause for which, poor wretches, they furiously contended even unto death.

Keen to enjoy they so parted their wealth that their portions are equal: yet the mediator hath not contented those who loved them, but gave his favour unto the god of war.²

Iron with his stroke hath laid them here: iron with his stroke shall yet lay them—ask ye where? In the grave with their fathers, which he shall dig for them their portion.

Thither are they brought with saddest sound, the rending wail of genuine grief, the true lament of a soul divided against itself, which careth not to be glad, but poureth its tears, oh, truly from the heart; for my very heart doth waste as I weep for the royal pair.

And this may be spoken for their sad funeral speech, that many a martial deed they did on the falling ranks of their countrymen, and many another too on foreign ranks, yet friends.

A mother had they more unhappy than all women called by that name. Her own child she took to her husband, and these she bare, who thus have died, each by hands made with his own from the same seed.

'One seed' in truth they had, and, making partition not like friends, by their mad quarrel utterly are they now undone at the ending of the strife.

Hate is no more; their life-stream mixes upon the gory ground, and their blood is one indeed.

Dearly they paid for peace, made by the stranger from the Great Sea, the iron sent sharp from the fire; and dearly for the

¹ Reading διχοφρονας.

² Reading ἐπιχαρισθ' Ἀρης.

arbitrament of false Ares, who gave them their father's curse fulfilled.

They have received their pitiable share of the royal realm,¹ a bottomless wealth of earth, but all beneath.

I add a few happy renderings with the Greek appended :—

109 *κῦμα γὰρ περὶ πτόλιν δοχμολόφων ἄνδρων
καχλάζει πνοαῖς Ἀρεος ὀρόμενον,*

‘For round about the citadel is seething a human wave of sloping crests, driven on by the breath of War.’

185 *ὦ φίλον Οἰδίπου τέκος ἔδεις ἄκού-
σασα τὸν ἄρματόκτυπον
ὄτοβον, ὅτι τε σύ-
ριγγες ἔκλαγξαν ἑλίτροχοι,*

‘Ah, son of Oedipus, dear, I *heard*, and with terror, the drumming of the chariots, and all the rolling bass of their wheels.’

680 *φίλου γὰρ αἰσχρά μοι πατὴρ τέλει ἄρᾳ
ξηροῖς ἀκλανστος ὄμμασιν προσίζάνει
λέγουσα κέρδος πρότερον ὑστέρον μόρου,*

‘Aye, for with fatal suggestion my loving father's hideous Curse doth sit at my side, saying, “There is something better than death deferred.”’

By the above extracts, readers of HERMATHENA will be able to form an estimate of the quality of Mr. Verrall's work as a translator. They would, I doubt not, be astonished on hearing it described as a ‘crib.’ Yet it has very recently been so described by a well-known writer on classical subjects.

¹ Reading *διοσδότων ἀρχέων*.

In the *Academy* for February 26th this writer in reviewing Mr. Verrall's *Seven against Thebes*, regrets that he should have appended to his edition a prose crib, adding that a crib 'offends a man of scholarly habits.' I have always understood that a *crib* is a version into English of an ancient author, which aims only at giving the meaning of the words, and perhaps indicating the construction, but which makes no attempt to reproduce the tone or spirit of the original, which it treats as a mere exercise in grammar, and not at all as a work of art. Now one has only to open Mr. Verrall's book, or to read the passages above, to see that, if this is the meaning of *crib*, no word could be devised more completely unfit to describe the character of his work. The critic, therefore, must attach some other meaning to the word *crib*. On closer examination of his review one gathers that, according to him, every translation of a metrical work which is not itself written in metre is a *crib*. We must designate as cribs the masterly prose versions of Sophocles by Jebb, of Homer by Butcher and Lang, of Pindar by Myers, of Virgil by Conington, and we must feel 'offended' on meeting them if we are 'men of scholarly habits.' We must be offended, too, by a certain 'crib' which, before we had learned from the *Academy* the whole duty of a scholar, we believed to have attained to considerable literary excellence in a passage beginning, 'Hast thou given the horse strength? Hast thou clothed his neck with thunder?' For the Book of Job in the Authorised Version is, in the critic's sense, a 'crib,' as surely as is Mr. Verrall's translation of the *Seven against Thebes*, or Prof. Jebb's of the *Ædipus Rex*, or Mr. Myers' of the *Odes* of Pindar. As a matter of fact, these masterpieces of style transcend, as conductors of poetry, the metrical versions of the same pieces, almost as much as the 'crib' of the Psalms in the Book of Common Prayer surpasses the

New Version (which is not a 'crib') by Brady and Tate. Is it for nothing that our own great tragic poet has taught us that metre—in its narrowest sense as distinguished from rhythm—is not of the essence of poetry, by disdaining metrical shackles in the most purely rhythmical and highly poetical passage in the greatest of his tragedies—I mean the sublime passage beginning, 'I have of late (but wherefore I know not) lost all my mirth'?

We learn, then, that the scholar ought to feel offended at translations like Mr. Verrall's. This leads one to think that the scholar's intellectual organism must at least be interesting by reason of its singularity. Hence we pursue the article, if haply we may gain some more hints about this curious creature. We soon find that he is sharply distinguished from the pedant, who 'will make a fuss about the theory that exact syllabic correspondence in strophe and antistrophe is not a law in the lyrics of Greek tragedy.'¹ The scholar, then, ought to be offended on meeting the very best and most poetical version of the *Septem* as yet given to the world; but he must, on pain of being called a pedant, feel indifference about the answer to the question, whether, on the one hand, from the time of the most learned scholiasts to the present day, the intellectual force which in every successive generation the highest minds have been proud to concentrate on the attempt to restore to us by far the most characteristic part of Greek tragedy, has been rightly directed, and rich in its results; or whether, on the other hand, it has all been laborious trifling, based on a mistaken principle, and leaving the

¹ Of course Mr. Verrall himself most fully recognises the magnitude of the innovation which he would make in the method of criticism. He defends his revolt from received opinion as to the nature of strophic correspondence in a very ingenious Appendix of considerable

length. He has not, in my opinion, made good his case; but I fear he has 'made a fuss about the theory' sufficient to justify our critic in dubbing him a pedant, from his point of view.

Greek tragic poets in a far more corrupt and vitiated condition than that in which it found them. This is the question to which, according to our critic, the scholar will be indifferent if he be not a pedant. Verily, one is ready to exclaim with Shakspeare (slightly modified to suit the present case)—‘A scholar! God’s light, these critics will make the word as odious as the word *occupy*, which was an excellent good word before it was ill sorted: therefore scholars had need look to ’t.’

ROBERT Y. TYRRELL.

March 10th, 1887.

MISCELLANEA.

AESCHYLUS—*Choeph.* 526–549.¹

- 526 OP. ἥ καὶ πέπυσθε τοῦναρ, ὥστ' ὀρθῶς φράσαι ;
 XO. τεκεῖν δράκοντ' ἔδοξεν ὡς αὐτὴ λέγει. (A)
 OP. καὶ ποῖ τελευτᾷ καὶ καρανοῦται λόγος ;
 XO. ἐν σπαργάνοισι παιδὸς ὀρμίσαι δίκην. (B)
 530 OP. τινὸς βορᾶς χρῆζοντα, νεογενὲς δάκος ;
 XO. αὐτὴ προσέσχε μαζὸν ἐν τῶνείρατι. (C)
 OP. καὶ πῶς ἄτρωτον οὐθαρ ἦν ὑπὸ στυγός ;
 XO. ὥστ' ἐν γάλακτι θρόμβον αἵματος σπάσαι. (D)
 OP. οὔτοι μάταιον ἀνδρὸς ὄψανον πέλει.
 535 XO. ἥ δ' ἐξ ὕπνου κέκραγεν ἐπτοημένη. (E)

IN the interpretation of the dream by Orestes the lines exactly correspond in sense :—

- 543 εἰ γὰρ τὸν αὐτὸν χώρον ἐκλείπων ἐμοί (a) = (A)

 545 καὶ μαστὸν ἀμφέχασκ' ἐμὸν θρεπτήριον, (c) = (C)
 θρόμβω δ' ἔμιξεν αἵματος φίλον γάλα, (d) = (D)
 ἥ δ' ἀμφὶ τάρβει τῷδ' ἐπώμωξεν πάθει. (e) = (E)

The corrupt line (544) therefore corresponded in sense to 529, ἐν σπαργάνοισι παιδὸς ὀρμίσαι δίκην (b = B). The corrupt line must be now considered. It is thus in M, with τζ in the margin (G inserts ο before πλ) :—

ΟΥΦΕΙΣΕ ΠΑΣΑΣΠΑΡΓΑΝΗΠΛΕΙΖΕΤΟ.

¹ *Poet. Scen.* (5th ed.).

Some one ignorant of ὄφης wrote—

- (1) ΟΥΦΙΣ¹; Ε then getting before Π, we have
- (2) ΟΥΦΙΣ ΕΠΑΣ for ΑΠΑΣ; then
- (3) ΟΥΦΙΣ ΑΠΑΣ^Α = ΟΥΦΙΣ ΑΠΑΣΑ,
- (4) ΟΥΦΙΣ ΑΠΑΣΑ = ΟΥΦΙΣ ΑΠΛΑΣ;
- ∴ (5) ΟΥΦΙΣ ΑΠΛΑΣ. ΤΟΣ (οὔφης ἀπλαστος).

Οὔφης ἀπλαστος in (b) thus emphasises παιδὸς δίκην in (B): *as if the hideous brute were her own flesh and blood*. So Orestes calls the snake σύξ and ἑκπαγλον τέρας. The rest of the verse is rendered by the Scholiast ἐπιμελείας ἡξιούτο; and as ΣΠΑΡΓΑΝΗ seems genuine, Η must be the temporal augment. Read, therefore,

οὔφης ἀπλαστος σπάργαν' ἡντιάζετο.

If N were omitted, and TIA (ΤΙΑ) mistaken for ΠΑ, ΗΝΤΙΑΖΕΤΟ (HNTIAZETO) would easily read ΗΠΑΖΕΤΟ. The omission of the N may be accounted for by its approximation in form to the H preceding, through thick-stroked or hurried writing, and is rendered more probable by the occurrence of N again before this H. In fact, in such a combination of letters as is seen in ΣΠΑΡΓΑΝΗΝΤΙΑΖΕΤΟ, one or other of the three so similar in shape (the 7th, 8th, and 9th letters in the group) could not but be overlooked in transcription. Hence the various corruptions.

Σπάργαν' ἡντιάζετο is the only conjecture which approaches the Scholiast's ἐπιμελείας ἡξιούτο. As to the sense, ὑπαντιάζω is used twice in connexion with clothing: *Pers.* 834, 850. As to ὀρμίσαι (MSS.) and ὀρμῆσαι (*Porson*), αὐτή (v. 581) necessitates τινός (v. 530), and that again

necessitates ὀρμῆσαι (V. 529) : ('She swathed it) *while showing desire for some food, as was natural? No; it did not show any: of herself she gave it the breast.*' But ὀρμῆσαι and αὐτή are a contradiction in terms: *the animal asked her for food, and she, unasked, gave it.*

Choeph. 691-692 (Dind., 5th ed.)

οἱ 'γὼ, κατ' ἄκρας ἐνθάδ' ὡς πορθοῦμεθα.
 ὦ δυσπάλαιστε τῶνδε δωμάτων ἀρὰ,
 ὡς πόλλ' ἔπωπῆς κάκποδὼν εὖ κείμενα,
 τόξοις πρόσωθεν εὐσκόποισ χειρουμένη,
 φίλων ἀποψιλοῖς με τὴν παναθλίαν.
 καὶ νῦν 'Ορέστης—ἦν γὰρ εὐβούλως ἔχων,
 ἔξω κομίζων δλεθρίου πηλοῦ πόδα—
 νῦν δ' ἤπερ ἐν δόμοισι βακχείας καλῆς
 ἱατρὸς ἐλπὶς ἦν, παροῦσαν ἐγγράφει.

There is no person marked in the MS.; so if we assign the speech to Clytemnestra, its dramatic effectiveness is greater than if it is assigned to anyone else. When spoken by Clytemnestra there is a *triple entendre*, as all the words suit—

1. Her pretended grief for Orestes ;
2. Her real joy at his death ;
3. The knowledge of the audience that Orestes is alive, and the consequences of that fact.

As to the words, there is no difficulty down to παναθλίαν, save that, in the second sense of real joy, πορθοῦμεθα refers to Electra. καὶ νῦν, as always, brings in the particular case of the curse on the house working in Orestes. The connexion of the four last lines has been much

disputed; but waiving the construction, the meaning is plain in all the three senses, viz.:—

1st sense.—*We hoped for his return, but he is dead, and that is the fulfilment of our hopes;*

2nd sense.—*I hoped for his death; he is dead, and my hope is fulfilled;*

3rd sense.—*He is alive, and home again, and so our hopes are fulfilled.*

As to the construction, Orestes is the nominative to ἐγγράφει; that is, Orestes—living or dead—realizes the expectancy, παροῦσαν agreeing with ἐλπίδα. To read ἐγγράφει is needless, though it would suit my view as well as the vulgate: ἐλπίς παροῦσα is, in senses 1 and 2, expectation fulfilled or disappointed: a bill falling due is ἐλπίς παροῦσα; and in sense 3 it refers to the παρουσία of Orestes. Expectancy is of the future; and when the future is present for good or evil, ἐλπίς may be called παροῦσα. Observe the present participle *in the course of being presented—there is more to come*. Peile aptly quotes St. Paul—ἐλπίς δὲ βλεπομένη οὐκ ἔστιν ἐλπίς· ὁ γὰρ βλέπει τις, τί καὶ ἐλπίζει—*Rom. viii. 24*. ἐγγράφει, like *acceptum referre*, the *l'ha pagata* of Loredano, *may be* the metaphor from accounts, but it is also applied to official entries of names in the Orators.

Mr. B. B. Rogers, in his note *The Peace*, '1180, takes it from marking a name as present at roll-call: this, too, would be an official entry. He makes ἀρὰν the noun of παροῦσαν, which really amounts in sense to the same thing, as Orestes—dead or alive—is the ἀρὰ *in concreto*.

As to βακχείας καλῆς, in the first sense it refers to *our pretended hopes of Orestes home again which made us all nobly wild, not mad*: in the second sense, it refers to *Electra and*

*her sincere hope that Orestes would come home and end βακχείας
καλῆς my passion for Aegisthus in which I glory—*

εὐνῆς παροψώνημα τῆς ἐμῆς χλιδῆς.

Ἰατρός has the double sense of *tempering—sobering*—as in

ὀργῆς νοσοῦσῃς εἰσὶν ἱατροὶ λόγοι,

P. V. 378.

and of *curing by killing*, as in

τῶνδ' ἀνηκέστων κακῶν

Ἰατρός.

Fragg. Phil. 244.

The good sense of βακχεία is shown by Plato, *Symp.* 218 B.,
cited by Peile.

Agamemnon, v. 612.

χαλκοῦ βαφάς.

Clytemnestra is queen of a country near which there is
purple-dyeing of much repute. The colour of the best
purple was that of clotted blood; laus ei summa, in colore
sanguinis concreti, nigricans aspectu, idemque suspectu
refulgens, unde et Homero purpureus dicitur sanguis (Plin.
IX. lxii. 3). Brazen vats were used for boiling the purple.

Pliny and the Latin poets use *aenum* for the dyeing-
vat: Praecipuum est primum fervente aeno rudibus medi-
camentis inebriatum (Pliny, XXXV. xxvi., 1); Ov., *Rem.*
Am., 707-8,

Confer Amyclaeis medicatum vellus aenis
Murice cum Tyrio;

Id., *Met.*, vi.:

Tyrium quae purpura sensit aenum;

Id., *Med. Fac.*, 9 :

Vellera saepe eadem Tyrio medicantur aeno ; ,

Lucan, x. 123-4 :

Strata micant Tyrio quorum pars maxima succo

Cocta diu virus non uno duxit aeno ;

Stat. *Silv.*, I. ii. 150-1 :

rupesque nitent quis purpura cedit

Oebalis et Tyrii moderator livet aeni ;

Sil. Ital., xvi., 177 :

Gaetulisve magis fucaret vellus aenis ;

Val. Flac., v. 513 :

Taenarii chlamydem de sanguine aeni.

The double meaning therefore is :—(1) for the chorus—
' *My conscience knows adultery no more than I am acquainted
with the brazen vat and its dyeing process* ; (2) for herself and
the audience—' *I am guilty of adultery and will be guilty of
bloodshed.*' Cf. the antistrophic irony of

εἰμάτων βαφάς,

i. e., purple and blood.

χαλκοῦ is the subjective genitive ; and πορφυρέα βαφῆ is
used for blood in *Pers.* 309 :

ἀμείβων χρώτα πορφυρέα βαφῆ.

HERODOTUS ON THE VOTE OF THE SPARTAN KINGS,

VI. 57.

I am not going to discuss the accuracy of the statement
of Herodotus : I wish only to ascertain what that state-
ment is. The passage is

καὶ παρίζειν βουλευέουσι τοῖσι γέρονσι, ἐοῦσι δυνάμει δέουσι τριήκοντα ἦν
δὲ μὴ ἔλθωσι, τοὺς μάλιστα σφί τῶν γερόντων προσήκοντας ἔχειν τὰ τῶν
βασιλέων γέρεα, δύο ψήφους τιθεμένους, τρίτην δὲ, τὴν ἑωυτῶν,

that is, *they sit in the senate, which consists of twenty-eight, during debate; and if they are absent, their nearest relative amongst the senators holds the royal prerogatives, and gives two votes for each of the kings, and the third for himself.* The holder of the proxies could hardly stand in the same relation to both the Royal families, *e.g.* an uncle of one king would hardly be the uncle of the other; and there was no reason why the two kings, like the Siamese twins, should both be absent at the same time: then again, if the kings, when present, had only one vote each, like the other senators, why does Herodotus talk of τὰ τῶν βασιλέων γέρεα? The γέρεα in the passage is strictly confined to the privileges of the kings in the Senate-house. Besides, if each proxy-holder only gave one vote for his king, τρίτην ought to be δευτέρην. I know τρίτην can be explained to suit the opposite view, but it is surely more natural to take it as above. The kings likewise have double allowance of other things.

CATULLUS—LXVI. 21, 22.

At tu non orbum luxti deserta cubile,
Sed fratris cari flebile discidium.

At is the MS. reading, and is right.

Catullus does not believe that brides really dislike their husbands (we must not forget that the ancient marriage was mainly managed by the fathers of both parties):

Non, ita me divi, vera gemunt, juerint.

At, as usual, anticipates an objection: 'to keep up your affectation, you will say that it was not the husband but the brother you missed.'

This Catullus answers by

Quam penitus maestas exedit cura medullas.

CLAUDIAN—*In Ruf.* I. 65, 6.—*cruentum**Mugit.*Cf. Virg., *Aen.*, ix. 349 :

Purpuream vomit ille animam.

The latter is due to πορφύρεος θάνατος, the progenitor of πευκήεντ' ὀλολυγμόν (Aesch. *Choeph.*, 386). Cf. Soph. *Philoct.*, 693–5, στόνον αίματοηρόν, and βλαχαί αίματοέσσαι.—S. c. T. 348.

In nuptias Honorii et Mariæ, 106–8.

Speculi nec vultus egebat

Judicio : similis tecto monstratur in omni,

Et rapitur, quocumque videt.

Of the bower of Venus: *wherever she looks, her image is caught*, i.e., it is all mirror. Conington suggests *capitur*, but *rapitur*, of light, is justified by

rapiat cenatio solem.

JUV. VII., 183 ;

speculum seclisit imagine rapta.

Stat. Silv. III. iii., 98.

LUCAN—II. 21–28.

Sic funere primo

Attonitæ tacuere domus, quum corpora nondum

Conclamata jacent, nec mater crine soluto

Exigit ad sævos famularum brachia planctus :

Sed quum membra premit fugiente rigentia vita,

Vultusque exanimis, oculosque in morte natantes :

Necdum est ille dolor, sed jam metus : incubat amens

Miraturque malum.

Could this have suggested the lines in the Giaour?—

He who hath bent him o'er the dead
 Ere the first day of death is fled,
 The first dark day of nothingness,
 The last of danger and distress
 (Before Decay's effacing fingers
 Have swept the lines where beauty lingers),
 And mark'd the mild angelic air,
 The rapture of repose that's there,
 The fix'd yet tender traits that streak
 The languor of the placid cheek,
 And—but for that sad shrouded eye,
 That fires not, wins not, weeps not now,
 And but for that chill, changeless brow,
 Where cold Obstruction's apathy
 Appals the gazing mourner's heart,
 As if to him it could impart
 The doom he dreads, yet dwells upon ;
 Yes, but for these, and these alone,
 Some moments, ay, one treacherous hour,
 He still might doubt the tyrant's power ;
 So fair, so calm, so softly seal'd,
 The first last look by death reveal'd.

VI. 471, 2.

puppinque ferentes
 in ventos tumuere sinus.

I do not know if it has been noticed that this is an anticipation of the Flying Dutchman, an account of which may be seen in the notes to Rokeby : *C. II. st. xi.*

TACITUS—*Hist.* I. 25.

Suscepere duo manipulares imperium populi Romani transferendum, et transtulerunt.

Apparently suggested by

civilia bella satelles

Movit et in partem Romanam venit Achilles.

LUCAN, X. 418, 19.

VIRGILIANA.

Quam mihi quum dederit, cumulatam morte remittam.

Aen. IV. 436.

Cumulatam is simply *cumulate satisfactam*: cf. *cumulata officia uitæ*, Cic. *Tusc.* I. 109;

cumulumque Capharea caedis.

Ov. M. XIV. 472;

Aerumnae cumulus,

Juv. III. 201;

and *pour comble, combler*. The metaphor is from dry measure heaped up. The words *talisque miserrima fletus Fertque refertque soror* 435, 6 prove *dederit* to be the right reading.

‘Heus, etiam mensas consumimus!’ inquit Iulus;

Nec plura adludens. Ea vox audita laborum

Prima tulit finem, primamque loquentis ab ore

Eripuit pater, ac stupefactus numine pressit

Continuo.

Aen. VII. 116–120.

Cicero has *quoniam me verbo premis*, *Tusc.* I. 13. This, by Virgilian variation, becomes *verbum premere*, and so *vocem pressit* is he took the expression *au pied de la lettre*. See my note, *Journal of Philology*, III. 278.

'Frangimur heu fatis,' inquit, 'ferimurque procella!
 Ipsi has sacrilego pendetis sanguine poenas,
 O miseri. Te, Turne, nefas, te triste manebit
 Supplicium, votisque deos venerabere seris.
 Nam mihi parta quies, omnisque in limine portus;
 Funere felici spoliior.' Nec plura locutus
 Sepsit se tectis rerumque reliquit habenas.

VII. 580-600.

In limine occurs in the sense of *edge* in M. Minucii F. *Oct. c. 3* quum in *ipso aequoris limine* plantas tingeremus. *In limine* means standing on the raised threshold either to go in or go out. *My haven is all at hand; my next step is into the grave.* *Ad limen* is the proper phrase in *to stumble against*.

Ad limen digitos restitit icta Nape.

Ov. A. I. xii. 4.

—peccare fuisset

ante satis, penitus modo non genus omne perosos
 femineum.

IX. 138-140.

They deserve pardon: yes, they do, who, a moment ago, showed their deep detestation of all woman-kind by trying to steal Lavinia. *Modo* always denotes change: *modo non* is used as two separated words by Juvenal.

Sed cujus votis modo non suffecerat aurum.

XIV. 298.

Lavinia was *sponsa* to Turnus;

Ni dare conjugium et dicto parere fatetur.

VII. 433.

sanguine quaesitas dotes.

Ib. 423.

Referring to the *dotis dictio*. No commentator, as far as I am aware, has brought out the sense of *modo*.

Non ego te, Ligurum ductor fortissime bello,
 Transierim, Cinyra, et paucis comitate Cupavo,
 Cuius olorinae surgunt de vertice pinnae,—
 Crimen amor vestrum—formaeque insigne paternae.
 Namque ferunt luctu Cycnum Phaëthontis amati,
 Populeas inter frondes umbramque sororum
 Dum canit et maestum Musa solatur amorem,
 Canentem molli pluma duxisse senectam,
 Linquentem terras et sidera voce sequentem.

Aen. x. 185-193.

In the Latin order *crimen* is the predicate: *What spread scandal was your mutual affection, and the wearing of the swan's feathers, which brought to mind the metamorphose of Cycnus*. If *vestrum* refers to Venus and Cupid, why did not Virgil write—*vestrum crimen, Amor* ? cf :

Vestras, Eure, domos.

Ib. i. 140.

Quandoquidem Ausonios coniungi foedere Teucris
 Haud licitum, nec vestra capit discordia finem :
 Quae cuique est fortuna hodie, quam quisque secat spem.

x. 96-98.

Secat spem is the share which each one carves for himself out of the hopes common to all. So in Horace—

— spatio brevi
 spem longam reseces.

C. i. xi. 6, 7 ;

that is, as life is short, cut away from hope in infinitum your own hope, i. e. make it proportionate to life.

Ipsē Mycēnaeus magnorum ductor Achivom
 Conjugis infandae prima inter limina dextra
 Oppetiit: devictam Asiam subsedit adulter.

Aen. xi. 266–8.

Devictam Asiam, the accusative of duration: cf.

venter dentesque resident esuriales ferias.

PLAUT. Capt. 468.

Subsedit is from *subsideo*, and not from *subsido*, which makes *subsidi*.

Longe illi dea mater erit, quae nube fugacem
 Feminea tegat et vanis sese occulat umbris.

Aen. xii. 52, 53.

Sese certainly Venus, referring to *Il. E.*, Venus saves Æneas, 314; but, as she lets him go,

ἐρύσσατο Φοῖβος Απόλλων
 κυανέη νεφέλῃ,

Ib. 344, 45;

Virgil gives the whole process to Venus, who thereby saves her son and herself. As to *longe illi*: cf. *longe iis frater-num nomen P. R. afuturum*.—Cæsar, *B. G. I.* 36.

PHÆDO—101 D—E.

οὐ δὲ δεδιώς ἂν, τὸ λεγόμενον, τὴν σαντοῦ σκιὰν καὶ τὴν ἀπειρίαν, ἐχόμενος ἐκείνου τοῦ ἀσφαλοῦς τῆς ὑποθέσεως, οὕτως ἀποκρίναιο ἂν; εἰ δέ τις αὐτῆς τῆς ὑποθέσεως ἔχοιτο, χαίρειν ἐφῆς ἂν καὶ οὐκ ἀποκρίναιο, ἕως ἂν τὰ ἀπ' ἐκείνης ὀρμηθέντα σκέψαιο, εἰ σοι ἀλλήλοις συμφωνεῖ ἡ διαφωνεῖ; ἐπειδὴ δὲ ἐκείνης αὐτῆς δέοι σε διδόναι λόγον, ὡσαύτως ἂν

διδόιης, ἄλλην αὖ ὑπόθεσιν ὑποθέμενος, ἥτις τῶν ἄνωθεν βελτίστη φαίνοιτο, ἕως ἐπὶ τι ἱκανὸν ἔλθοις, ἅμα δὲ οὐκ ἂν φύροιο, ὥσπερ οἱ ἀντιλογικοί, περὶ τε τῆς ἀρχῆς διαλεγόμενος καὶ τῶν ἐξ ἐκείνης ὥρμημένων, εἴπερ βούλοιο τι τῶν ὄντων εὐρεῖν; ἐκείνοις μὲν γὰρ ἴσως οὐδὲ εἰς περὶ τούτου λόγος οὐδὲ φροντίς· ἱκανοὶ γὰρ ὑπὸ σοφίας ὁμοῦ πάντα κυκῶντες ὁμῶς δύνασθαι αὐτοὶ αὐτοῖς ἀρέσκειν· σὺ δ', εἴπερ εἰ τῶν φιλοσόφων, οἶμαι ἂν ὡς ἐγὼ λέγω ποιοῖς.

The Platonic method: a supposition—*ὑπόθεσις*—is tested in the first instance by its results, *i.e.* Verification by Deduction. This is open to objection, if there be Plurality of Causes; but such Plurality is here excluded, because the Platonic Idea is one. Compare Kant's reasoning as to the validity of the *a priori* Experiment. In the second instance, if you wish to test the hypothesis itself, it, in turn, is verified by its Subsumption under a larger hypothesis, until the last is subsumed under the Absolute, just as Leibnitz treats his contingent series. The wrong method is considering the hypothesis and its consequences all together, an example of which is modern utilitarianism, which lumps an action and its consequences. Exception has been taken to the double use of *ἔχομαι*; but the fact is, *ἔχομαι* means *to hold on to*, and the intention is to be gathered from the context: *cf.* *ἱκανός* in this passage in two senses. *ἔχομαι* is used in connexion with hostile intent, a sense denied by Mr. Archer-Hinde, in Demosthenes, *τούτων γὰρ εἰχόμεν ἐγὼ καὶ τούτοις ἡναντιούμεν*.—*De Cor.* 79: *cf.* *Θρῆναικοὶ—ἀψύχων μὲν ἐχόμειοι πάντων*, *Legg.* 782*c.* *Ἰάσων . . . εἵχετ' ἔργου*, *Pind. Pyth.* iv. 233, 4. The gist of the whole passage is—test the hypothesis by Verification, and strengthen it by Subsumption, recollecting always there is no Plurality of Causes. Science, I may add, since Mill's time, is running counter to the Plurality of Causes. As to the difference between *ὁρμηθέντα* and *ὥρμημένα*, the latter means the consequences as already given, *ὁρμηθέντα* as eventuating.

Oedipus Rex (27-29).

κεί μὲν φοβεῖται, τοῦτίκλημ' ὑπεξελὼν
 αὐτὸς καθ' αὐτοῦ, πείσεται γὰρ ἄλλο μὲν
 ἄσπεργες οὐδὲν, γῆς δ' ἄπεισιν ἀβλαβής.

Much has been written on this passage by the most eminent scholars, and yet, I think, they have somewhat overlooked the context, as well as the force of each word. The case is this: the oracle directs the Thebans, specifying no one, to drive the pollution caused by the bodily presence of the murderer from the land, 95-8. The oracle indicates two ways of doing this: (1) by taking his life; or (2) by banishing him. Oedipus, whose sympathies are already excited by the sufferings of the Thebans, volunteers to aid the oracle 135, partly on patriotic and partly on personal grounds 145, and issues a proclamation in support of the oracle. This is addressed to every Cadmean—

ὑμῖν προφωνῶ πᾶσι Καδμείοις τάδε;

and it lays upon everyone the obligation of giving him, Oedipus, information; and the obligation is sanctioned by the curses which he calls down on non-compliance. There are three cases possible: a Theban may inform—(a) against himself; (b) against another Theban; (c) against an alien. So far all is clear. And now comes the disputed passage—*And, if he is frightened, because, by his own act against himself, he has got rid of the criminality of silence*, i.e. because his confession places him in my power, good sooth, γὰρ, *he shall not meet with any unpleasantness, but shall depart unharmed from the land.* The strict force of γὰρ is pointed out by Shilleto's Thuc. I. 25, 4; and this passage of Sophocles is referred to, in brackets, in the index under γάρ. Τοῦτίκλημα refers not to the guilt of

blood, but to the culpability of withholding information ; it is not as strong a word as *ἐγκλημα*, and suits the proclamation of Oedipus, which is enforced by curses only. That the immediate reference is to the king's proclamation, and not to the oracle, is shown by the words of Tiresias

ἐννέπω σὲ τῷ κηρύγματι
ὥπερ προεῖπας ἐμμένειν.

vv. 350-1 ;

τὸν ἄνδρα τοῦτον δὲν πάλαι
ζητεῖς ἀπειλῶν, κἀνακησύσσω φόνον
τον Λαίειον.

449-51 ;

and, further on, Oedipus remits the sanction, at the request of his wife, in favour of Creon, even to his own hurt,

ὁ δοῦν ἴτω, κέῃ χρὴ με παντέλως θανεῖν
ἢ γῆς ἄτιμον τῇσδ' ἀπωσθῆναι βίῃ.

669-70 ;

that is, under his own proclamation.

ἐπίκλημα = any cause of complaint, *e.g.*,

παρ' οὐδέν αὐταῖς ἦν ἂν ὀλλύναι πόσεις
ἐπίκλημ' ἐχούσαις ὅτι τύχοι.

Orest. 569-70 ;

and the word is used in Xenophon = *πένης καλοῦμαι*, of Socrates :

καὶ πάνυ μεντάν, ὦ Ισχύμαχε, ἦν ἐν πόλλῃ ἀθυμία τῷ ἐπικλήματι
τούτῳ.—*Oecon.* xi. 4 ;

as to *ὑπεξελών*, there is necessarily no sense of secrecy in either the active or passive, either in

παλίσρυντον γὰρ αἶμ' ὑπεξαιροῦσι τῶν
κτανόντων οἱ θανόντες.

SOPH., *Electr.* 1420, 1 ;

or in

μὴ ὑπεξελεῖν τῷ Περδίκκῃ τὰ δεινά,

THUC. 4, 83 ;

or in

ὑπεξαιρεῖν δὴ τούτους πάντας δεῖ τὸν τύραννον, εἰ μέλλει ἄρξειν.

PLAT., *Rep.* VIII. 567 b ;

or in

ὄλβον δωμάτων ὑπεξελών.

HIPP. 629 ;

or in

τουτέων ὑπεξαιρημένων.

HER. VIII. 8, 3.

The middle stands on a different footing, as the notion of self alters the ground notion, but even here there is no implication of secrecy in the word apart from the context :

εἴτα ὑπεξαιρῶμαι καὶ ἀποβάλλω.

PLAT., *Theact.* 151 c ;

ὥς ἄρα ὑμεῖς τῶν ἰδίων τι κτημάτων ὑπεξαιρούμενοι.

DEM. *d. F. L.* 88.

I do not know of any other instance of the use of this verb.

As to the use of γὰρ, Shilleto's question is triumphant. Why, if γὰρ = *for*, does not Thuc., and other prose writers, use the indicative in place of the participle? The same use clears up a passage in the *Agamemnon*—

εἴτ' ἂν δὲ νυκτίπλαγκτον ἔνδροσόν τ' ἔχω
εὐνήν, ὀνείροις οὐκ ἐπισκοπούμένην
ἐμὴν, φόβος γὰρ ἀνθ' ὕπνου παραστατεῖ.

11-13.

THOMAS MAGUIRE.

MR. VERRALL'S EDITION OF THE
'SEPTEM CONTRA THEBAS.'

MR. VERRALL'S Edition of the *Septem contra Thebas* must for a good while occupy the attention of scholars. It will add to the already high reputation of its author for learning, taste, and originality. For it is undeniable that Mr. Verrall is universally regarded as a teacher from whose writings much profit has already been derived, and much more is confidently expected. Such is the feeling which animates the writer of this article; and when criticisms of Mr. Verrall's views are offered in the following pages, it is hoped that they will be regarded as sincere expressions of an interest which Mr. Verrall himself has deeply at heart, and which he will pardon another for endeavouring to defend.

The scope of Mr. Verrall's edition is too wide to admit of exhaustive criticism in a short paper. Not only does it involve many innovations in the details of reading and interpretation, but it also propounds some new principles. For example, Mr. Verrall puts forward a view of metrical correspondence between the parts of the Æschylean lyrics which would require a modification of the views generally accepted or acquiesced in. To collect sufficient data for a fair examination of his theory would be a matter of much time and labour. Others will, no doubt, join issue with him on the important question he has raised, or will, after mature deliberation, endorse his conclusions. We shall here confine ourselves to the consideration of minor points: regretting that a critique is, and must be, mainly

polemical, and that we are therefore precluded from the pleasant task of drawing attention to the excellent notes with which Mr. Verrall's book abounds—notes replete with information, alike interesting, new and (in our opinion) true, and which are certain to secure for Mr. Verrall's *Septem* that permanent place in the esteem of all scholars which his *Medea* has long ago won.

We now proceed to pass under review some of Mr. Verrall's most striking emendations. The lines of the *Septem* referred to by us will be numbered as in his edition, which, we are entitled to assume, will be in the possession of all our readers.

Verse 23 :

καλῶς τὰ πλείω πόλεμος ἐκθέων κυρεῖ.

Here, for ἐκ θεῶν, Mr. Verrall reads ἐκθέων and translates, 'our war in sallies has been for the most part successful.' The reason assigned for the change is that the old reading involves a confession of faith inconsistent with the character of Eteocles. But the scepticism of Greek tragedy is hardly ever thorough or consistent, and this reason is therefore without force. In the second place, if the poet had intended to refer to sallies we should have heard more of them; but they are not elsewhere spoken of. In the third place, we ask, does Mr. Verrall translate his reading fairly? The construction of it would be (prosaically put) ὁ πόλεμος καλῶς κυρεῖ ἐκθέων, that is to say, ἐκθέων would be part of the logical predicate. Now, does Mr. Verrall not make it part of the subject? He cannot help seeing that this is the impression his translation would inevitably leave on a reader's mind; but he can scarcely have intended it.

It will be noticed as a feature of Mr. Verrall's alterations that they often affect no more than the division of

the words and the placing of the accents. Such is the emendation discussed above. We turn now to another very similar.

In v. 100, instead of *πάταγος οὐχ ἐνὸς δορός* Mr. Verrall reads *π. οὐ κενὸς δορός*. For this use of *κενός* (which really needs no defence, being both natural and simple) Mr. Verrall refers to the Rhesus, where, in the line

ὄρθος δ' ἀνέσσω χειρὶ σὺν κενῇ δορός,

the word in question is used without metaphor by a speaker who simply means, and says, that he had no weapon in his hand. The difference of use in Mr. Verrall's reading, needless to say, is immaterial as against his reading, and has point only as against his reference in its defence. The sense of the text as given by him is excellent, and we should, perhaps, agree to this slight change, but that the question, Why has the former reading been altered? first demands an answer. Mr. Verrall says—'The MS. appears to me impossible: *not one* is no synonym for *many*.' Had he said *οὐχ εἰς* is no synonym for *πολλοὶ* he would have perhaps said only what he intended. His assertion would certainly have been much harder to gainsay. That *non unus*, at all events, can be a synonym for *multus* may be shown from at least three passages of Juvenal. Observe that in each case it means distinctly *many*, and cannot be regarded as merely equivalent to *several*.

In Juv. III. 151, we read—

atque recens linum ostendit non una cicatrix.

Ibid. VI. 218:

non unus tibi rivalis dictabitur heres.

Ibid. VIII. 213-4:

cuius supplicio non debuit una parari
simia—

No less natural than this use of *non unus* (which, I need scarcely say, is no idiosyncrasy of Juvenal) would the use of οὐχ εἷς be, which Mr. Verrall declares impossible. To find instances of that usage in Greek is not easy, though good analogies are not lacking. We will not enter into a minute discussion of the matter, especially with Mr. Verrall who would be among the last to reject a natural expression found, or hitherto supposed to be found, in a Greek author, merely on account of its being rare, or even solitary. We may, however, refer to Blomfield's note on the passage, in which this use of οὐχ ἐνός is, in our opinion, fully supported and illustrated, as a case of *ltoles*. Hence there is no necessity for reading οὐ κενός.

In v. 251, Mr. Verrall reads—

καὶ πρὸς γε τοῦτοις, ἐκτὸς οὖσ' ἀγαλμάτων.

The spaced type represents the change, which only amounts outwardly to a difference in the breathing of the initial vowel. Mr. Verrall takes the aspirated word as verbal of ἔχσθαι in the sense of 'holding on to.' That the verbal may, and often does, take its shade of meaning from the middle verb is quite true; that ἐκτὸς may be of only two terminations, who, in the total absence of direct proof or disproof, will venture to deny? We will not insist too strongly on the likelihood that this verbal of so common a verb would have had better title-deeds, had its escutcheon not been (for some cause or other) crossed with the bar sinister; nor shall ἐκτὸς be prejudiced over much, in our minds, by the circumstance that the only author who undoubtedly employs the word (if Mr. Verrall can point to more, our apologies are ready for him) uses it as the verbal of ἔχειν, not ἔχσθαι; but that this¹ author should be Dio- genes Laërtius (3. 105 : τῶν ἀγαθῶν γένη ἐστι τριά. τὰ μὲν γὰρ

¹ The passage of Athenaeus, referred to by L. and S., must be held worthless as evidence.

ἐκτὰ, τὰ δὲ μεθεκτὰ, τὰ δὲ ὑπαρκτὰ) is very significant. Mr. Verrall would not, of course, found a positive argument for his emendation on the occurrence of ἐκτός in Diogenes: the unsupported testimony of this witness would rather prejudice than serve his case. If it be said, as it may, perhaps, that Diogenes (who is, in the place referred to, trying, in his blundering way, to sketch the philosophy of Plato) *quoted* the word from Plato or the Platonists, the most that could follow from this would be that it was used or coined to meet the exigencies of a philosophic division. And if so, this exceptional use would be a strong argument against the general use of the word, and almost fatal to Mr. Verrall's emendation. Let us turn to another of these apparently slight alterations.

In v. 269, for ἐπ' ἄνδρας, Mr. Verrall reads ἐπανδρὰς—a mere change of accentuation and division. What could be at first sight more allowable? But

hae nugae seria ducunt

in mala—

as will presently appear. Mr. Verrall finds difficulties in ἐπ' ἄνδρας, and difficulties no doubt there are; but let us observe those which spring up about his own reading. And here we may say, once for all, that we do not object to the restoration of a word which happens to be rare or solitary, if this be the only ground of objection. The mere rarity of the word might supply the critic with obvious and good reasons for explaining the corruption of the text by an ignorant copyist. But, if extravagance is to be avoided, such words must have more than a hypothetical existence, or at the very least must contain no inherent impossibility. Now ἐπαναδιδράσκειν, in the sense Mr. Verrall gives to it, is an impossible word. Ἐπιδιδράσκειν is unknown to the Greek lexicon: ἀναδιδράσκειν is practically unknown; ἐπαναδιδράσκειν is, we venture to say,

unheard of till now. And the reasons of this are easy to see. The simple verb διδράσκω (which has no classical authority) means only to run *away*, differing in this respect from all other simple Greek verbs which signify to run. And, accordingly, we find it only compounded with prepositions which emphasise this peculiar sense *i.e.* with ἀπό, συναπο, ἐκ, and διὰ. Even for the dubious ἀναδιδράσκειν, quoted by L. and S. from Polybius, the meaning assigned is 'to run *away* again.' Now what sense does Mr. Verrall assign to his ἐπανδράς? He explains it *hastening back again*, that is, to resume certain preparations which had been interrupted. But from the meaning of the simple verb as given by unquestionable tradition, and especially from the nature of the prepositions with which it is always found in composition, we may infer with absolute certainty, not alone that the form which Mr. Verrall calls into life for Æschylus would be illegitimate; but further, that his explanation of it would be impossible. Ἐπαναδιδράσκειν, did it exist, could only mean 'to run *away* again (or 'upward' or 'backward') in some definite direction.' The word italicised in the English gives what would be an essential part of the sense. We say no more about this emendation, but we take our leave of it with one remark. We wish to save for critics the right to introduce uncommon words as emendations—a right which is undoubted when properly understood, and limited accordingly, but which, like all other rights, would be most endangered by its own abuse.

In v. 259, Mr. Verrall has a very remarkable reading—

Δίρκης τε πηγαῖς—οὐδατ' Ἰσμηνοῦ λέγω.

We need say nothing of the reasoning by which he convinces himself that the fountain Dirce may be described as ὕδατα Ἰσμηνοῦ. Nor will we quarrel with the remark that Æschylus may have introduced a Theban word—however

bizarre the effect of it in senarii may seem—into the speech of a Theban character. We merely observe that the verse as printed by Mr. Verrall contains a false quantity. When we read in the Bœotian dialect οὔδατα, *e. g.* (instead of the Attic ὕδατα) we must not let its outward form mislead us as to its pronunciation. In this case ου does not indicate a change in the metrical value of the syllable: it merely points to a less developed—a Bœotian—way of sounding the Attic υ. It is not true that while the Attic ὕδατα is a tribrach the Bœotian οὔδατα is a dactyl. They are metrically equivalent. For proof of this doctrine, which is neither peculiar to us, nor at all new¹, let us scan the following verse of Corinna, as it is scanned by Bergk:—

Μέμοφονη δὲ κῆ λιγουράν Μούρτιδ' ἰώνγα—

a familiar verse which must be well known to Mr. Verrall. We see from this that λιγουράν and λιγυράν are metrically convertible, and the same conclusion follows by complete analogy for οὔδατα and ὕδατα. Mr. Verrall's emendation, therefore, is untenable, unless, indeed, on one or other of two assumptions, viz., either that Æschylus lengthens, in accordance with epic usage, the naturally short vowel of ὕδωρ; or that he was ignorant of the metrical value of the word as used by Bœotian poets. But neither assumption will bear a moment's consideration.

We shall in the next place examine Mr. Verrall's treatment of vv. 254-5:—

ἔπειτα σὺ

ὀλολυγμὸν, ἱρὸν δ' ὅν μόνῃ, παιάνισον,

the spaced type indicating his reading for the MS.

¹ οὔπερ ἀνάπαλιν οἱ Βοιωτοὶ ποιοῦσι κατὰ τὴν Ἡρακλείδου παράδοσιν, προστιθέντες αὐτοὶ τῷ υ διχρόνῃ τὸ μικρὸν ο, καὶ βραχυνομένου μὲν φησι βραχύνοντες, μηκυνομένου δὲ μηκύνοντες, τὸ ἵλαι οὕλῃ λέγοντες καὶ τὸ ὕδωρ οὔδωρ.—

Eustathius, 23, 30.

'υ et breve et longum a Boeotis in ου mutabatur quantitate non mutata, ita ut ου quod esset pro brevi υ corripereetur.'—Ahrens, *De Dialectis Aeolicis*, p. 180.

ἱερὸν εὐμενῇ. Mr. Verrall's translation of his text is, 'do thou whose sacred privilege it is, follow my prayer with the accustomed cry,' *lit.* 'it being a thing consecrated (set apart, reserved) for thee alone.' The obvious comment to be made on this is, that it could be a correct translation only on the hypothesis that the person addressed in σὺ was a divinity. But the person is a woman. It is known that ἱερὸν τινι is not the same as ὑσιόν τινι. Mr. Verrall does not, it is true, actually make ἱερὸν here bear the sense of ὁσιον, but he nevertheless gives it a sense which it will not bear. 'ἱερός is a word which involves direct relation to a divine person. We shall not allude to its etymology, but dwell on the simple fact that to a Greek ἱερὸν Βρασίδῃ would have been an unintelligible or a profane expression, at least while Brasidas was in the flesh. Accordingly the scholiast here gives ἱερὸν this divine reference; and the modern critic who accepts μόνῃ as a correction should not, as Mr. Verrall does, understand σοί out of the σὺ, which just precedes, but rather inquire who the particular goddess referred to is, or why the scholiast conceived it to be Athena. We do not feel convinced that he thought of her merely on account of the Homeric passages he quotes; probably he had some reasons for doing so founded on the text he was annotating: Athena is the deity on whose protection the Cadmeans most relied. The point to insist upon is, that if ἱερὸν has a dative after it indicating the person to whom some thing (or person) is consecrated, the word in the dative must be or belong to the name of a divinity.

There is a point in the very interesting note of the scholiast of which Mr. Verrall does not seem to take sufficient notice. The scholiast says that here the poet *distinguishes* the ὀλολυγμός from the παίαν: but how do we find the fact to be? Æschylus writes, as our text stands, ὀλολυγμὸν . . . παίανισυν, the best imaginable way of con-

founding, not distinguishing; the words, so much so, indeed, that the distinction is not observable in Mr. Verrall's own rendering, where *ὀλολυγμὸν* alone is done justice to, and *παιάνισον* quite colourless in the English. We agree with Mr. Verrall that the scholiast's note has no bearing on the hitherto received text, and that the latter is corrupt beyond a doubt. We also think that Mr. Verrall has been not quite unsuccessful in his attempt to restore the true reading; and it appears the new point of departure for the critic would be the text as Mr. Verrall gives it, with the view of *ἱερὸν*, which has been pressed by us above, and recognized by the scholiast. It would be a further problem to explain how the scholiast found the distinction he notes between *ὀλολύζειν* and *παιανίζειν*.

JOHN I. BEARE.

PARONOMASIA IN PINDAR.

TO the ancient Greeks, as is well known, a play on words meant much more than a pun. Pindar and Aeschylus did not conceive that words were chosen arbitrarily to mean this or that without any particular motive; they rather thought that they were a divine but artificial invention, and that each sound had some mysterious affinity with the idea it represented. It was a necessary consequence of this point of view that words of similar sound but different connotation should suggest the fancy that some hidden resemblance existed between the ideas connected. The most familiar and obvious examples of this feeling are the significations attached to proper names, as if the name of a man magically indicated his destiny. The derivations of Odysseus in the *Odyssey*, of Helen and Apollo in the *Agamemnon*, of Iamos in Pindar, of Pentheus in the *Bakchai*, of Aias in the *Ajax*, are familiar. Pindar and Aischylos, who were both mystics, had a special love for interpreting the significance of names; and plays upon words were well suited to their elaborately artistic style, which dealt largely in indirect hints and covert suggestions. The extent to which Pindar carried the use of paronomasia has not, I think, been fully appreciated. The present Paper is intended to call attention to some remarkable instances.

I. The second and third Olympian odes were written for the same occasion, Thêrôn's victory in the chariot race, 476. The third is shorter and of more simple construction than the second; but we cannot say that it has yet been

adequately analysed, or its leading thought sufficiently explained. Mezger finds the leading thought in the value of the olive tree, and in this he is evidently correct; for the subject of the myth is the manner in which Hêraklês brought the precious tree from the Hyperborean land to Olympia, and planted it there. But in what exactly does the value of the olive tree consist?

It served a double purpose (l. 18); it supplied shade and was a crown of victory. And it is to be remarked that it is on the first of these purposes that the poet lays all the stress. For, in the first place, he assigns it as the motive which induced Hêraklês to fetch the olive tree from the Istrian land, and plant it at Olympia; because no trees grew there, and the meadow seemed to him exposed to the sun's sharp rays (ll. 23, 24). And, in the second place, the shadiness is emphasized by the repetition of the word 'shady':

L. 15—

τὰν ποτε

Ἰστρου ἀπὸ σκιαρῶν παγῶν ἐνείκεν Ἀμφιτρυωνιάδας,

'which the son of Amphitruon brought on a time from the shady springs of Istros,'

and l. 18—

σκιαρὸν τε φύτευμα ξυνὸν ἀνθρώποις στέφανόν τ' ἀρετῶν.

'to be at once a shady plant for men and a crown for goodly deeds.'

The olive is the symbol of shade and the rest which shade invites, as well as of victory. We can easily understand the significance of this if we call to mind the spirit of the other ode written for Thêrôn on the same occasion, the second Olympian. The myths related in it are instances of grief that had been turned into joy, by which Pindar evidently intended a personal application to Thêrôn, who had been involved in many trials, dangers, and diffi-

culties, and had come safely through.¹ The Olympian victory took place about the same time that the King of Akragas had weathered the threatening storms. And in the third Olympian ode Pindar signifies that, even as the symbol of victory, the olive, serves also as a shade, so doth the victory bring rest after toil. This is the leading idea of the ode.

In the 17th line we find in several good MSS.

πιστὰ φρονέων Διὸς αἵτει πανδόκῳ
ἄλσει,

where other MSS. have ἔτει or αἰτεῖ. Eustathius recognised αἵτει ;

λέγει δὲ Πίνδαρος ἐν Ὀλυμπιονίκαις καινῶς αἵτος τὸ ἐνδιαίτημα, οἷον
Διὸς αἵτει πανδόκῳ (381, 27),

and Bergk has retained it rightly in his Fourth Edition. Can we assign a reason which induced Pindar to use this strange word ?

A similar question may be asked in regard to line 12 :

ᾧ τινι κραίνων ἐφετμὰς Ἡρακλῆος προτέρας
12 ἀτρεκῆς Ἑλλανοδίκας γλεφάρων Αἰτωλὸς ἀνὴρ ὑψόθεν
ἀμφὶ κόμαισι βάλλῃ γλανκόχροα κόσμον ἐλαίας.

Here by Αἰτωλὸς Pindar means Ἡλείος, referring to the colony of Oxylos. Why does he not say Ἡλείος ? Why does he go out of his way to use the less obvious word ? For we cannot place Pindar in the same category as Propertius and Lykophron, who used to introduce obscure legends and obscure names for the mere sake of the obscurity.

These two questions answer each other. Pindar chose these words, αἵτος and Αἰτωλός, in order to express, by means of their similarity in sound, a connexion between the planting of the olive at Olympia by Hēraklēs and the

¹ Boeckh has clearly shown this.

act of the judge when he placed the olive wreath on the brow of the victorious Thêrôn. The Aetolian man is, as it were, 'a man of the *αἶρος* of Zeus.' But we must beware of supposing that Pindar considered this similarity accidental, and was conscious that he was taking advantage of an accident in order to emphasize the train of his thought. We must rather presume that he saw in the words a mysterious and designed coincidence, and was as guiltless of a calembour as a modern poet would be who correctly connected the Knights Templar with the Temple of Jerusalem.

There is an unmistakable parallel between Hêraklês and Thêrôn. As the hero obtained the shady tree in the land of Istros, so the victor wins the same symbol of shade at Olympia. It was in performing one of his labours, the quest of the golden stag, that the son of Amphitruôn saw and admired the shady olive trees; and so it was by the labour of a severe contest that the son of Ainêsidosamos gained the olive wreath. But, besides the wreath, the success of Thêrôn's steeds wins a hymn of victory—*ἀκαμαντοπόδων ἵππων ἄγων* (l. 4); and we must attentively observe what the parallel is.

(1) The immediate object of Hêraklês in visiting the northern lands was the golden stag. The immediate object to be gained by victory in the race at Olympia was the prize awarded, the olive wreath. (2) Hêraklês saw the shady olive trees, but they were not his immediate object; he made a second journey expressly for their sake, though the mere fact of the double journey is not emphasized by Pindar. A result of Thêrôn's victory, though it was not his direct object in contending, was the epinikian hymn. Thus, what the golden stag was for Hêraklês the olive wreath was for Thêrôn; and what the olive tree was for Hêraklês the hymn of victory was for Thêrôn.

Now, it is to be noted that Pindar passes over the prize

wreath and the stag with the slightest mention. To the former are devoted three lines (11-13) in the first epode, and to the latter three lines (28-30) in the second epode. It is the indirect result of Thérôn's victory, the hymn (see stroph. and ant. α, and ant. γ), as it is the indirect result of Héraklēs' labour, the olive tree, that the poet accentuates.

The correspondence noted by Mezger, in accordance with his principle, confirms this. *Ἰππων ἄωτον* occupies the same position at the beginning of the fourth line of the first strophe as *Ἰππων φντεῦσαι* occupies at the beginning of the fourth line of the third strophe: which, being interpreted, means that the shady olive represents figuratively the victory song.

The close of the ode—the third epode—contains the same idea that we find in the hymn composed in honour of Hiero's Olympic victory (*Olymp. i.*). Compare (iii. 42):

εἰ δ' ἀριστεύει μὲν ὕδωρ κτεάνων δὲ χρυσὸς αἰδοιέσταιον

and (i. 1):

ἀριστον μὲν ὕδωρ ὃ δὲ χρυσὸς αἰθόμενον πῦρ ἄτε διαπρέπει νυκτὶ μεγάνορος
ἕξοχα πλούτου.

The supreme excellence of the Olympic victory is, in both cases, compared with the excellence of water (among elements) or gold (among possessions). The same conclusion is drawn in both cases:

(iii. 44) τὸ πόρσω δ' ἔστι σοφοῖς ἄβατον
 κάσόφοις. οὐ μὴ διώξω' κεινὸς εἶην.

(i. 114) μηκέτι πάπταινε πόρσιον.

II. The second Olympian ode was written on the same occasion as the third. On the latter part of this ode much light was thrown by Mr. Verrall's explanation of l. 87, *κόρακες ὥς ἄκραντα γαρούετον*, as an allusive reference to the

Sicilian rhetors Korax and Teisias. In l. 95 he returns to them—

ἀλλ' αἶνον ἐπέβα κόρος Ἐπ. ε'.

οὐ δίκη συναντόμενος ἀλλὰ μάργων ὑπ' ἀνδρῶν
τὸ λαλαγῆσαι θέλων κρύφον τε θέμεν ἐσλῶν καλοῖς
ἔργοις· ἐπεὶ ψάμμος ἀριθμον περιπέφενγεν,
καὶ κείνος ὅσα χάρματ' ἄλλοις ἔθηκεν.

100 τίς ἂν φράσαι δύναίτο;

We may translate *κόρος* by 'envy'; but it implies something more, as Disson explains, 'quum beneficia, ut fit, fastidium et invidiam creassent.' The word also reminds the reader that Korax was one of the slanderers; and possibly *αἶνον* may be intended to suggest that the person slandered was the son of Aínésidamos. The slanderers are called *μάργοι ἄνδρες*, and the employment of the epithet *μάργος*, which generally means 'greedy' or 'mad,' in reference to the professors of rhetoric, seems to require some explanation, as Pindar is not in the habit of using words pointlessly. I would suggest that it is an allusion to Margites, the Jack-of-all-trades.¹ The teachers of rhetoric professed to be able to speak on any subject. But *μάργος* probably also suggests the greediness of crows as well as the versatility of adventurers.

Pindar says: But the praises due to Thêrôn have been assailed by unjust envy, which desires to make a noise, and throw a shadow over the noble deeds of good men. It is difficult to see the exact connexion between this and the following sentence. The punctuation in our texts implies that *ἐπεὶ* introduces a reason for a statement just made. But the fact that sand cannot be numbered is not a reason for either the statement that *αἶνον ἐπέβα κόρος*, or the statement that *κόρος θέλει τὸ λαλαγῆσαι*, κ.τ.λ. We must therefore place a full stop at *ἔργοις*, and explain the last sentence by itself. We may translate, 'Inasmuch as the

¹ πῶλλ' ἥπιστάτο ἔργα κακῶς δ' ἥπιστάτο πάντα.

sand is too great for number, so the number of all the joys he caused unto others, who could tell ?' But we have still to seek for the causal connexion : *ἐπεὶ* is not the same as *ὥς*. Pindar is playing on words. As the sand is countless, so the shingle ; and the similarity of sound suggests a conclusion from *χέρματα* (*cf.* *χερμάδιον*, *χερμάς*) to *χάρματα*.

We must further notice that the last epode—quoted above—takes up, and designedly refers back to, the first epode :

15	τῶν δὲ πεπραγμένων	Ἐπ. α'.
	ἐν δίκη τε καὶ παρὰ δίκαν ἀποίητον οὐδ' ἄν	
	χρόνος δὲ πάντων πατήρ δύναιτο θέμεν ἔργων τέλος·	
	λάθῃ δὲ πόντῳ σὺν εὐδαίμονι γένοιτ' ἄν.	
	ἔσλῳ γὰρ ὑπὸ χαρμάτων πῆμα θνάσκει	
20	παλίγκτον δαμασθέν, κ.τ.λ.	

(1) In this ode the just and the unjust are more than once contrasted ; in the myth of the under world the lot of the wicked is mentioned as well as that of the blessed, and the evil slanderers are contrasted with the noble Thêrôn, as well as with the divine bird of Zeus. The slander of Thêrôn is one of the 'things done contrary to justice,' *παρὰ δίκαν*, which cannot be undone, but may be outdone by *ἔσλῃ χάρματα* ; and Pindar has indicated this by placing *οὐ δίκη* (l. 96) in the same metrical position as *ἐν δίκη* (l. 16) ; and thus the general statements of the first epode receive particular point in the last. (2) In the first epode it is said that not even time can render just deeds undone ; in the last epode it is said that the slanderers were fain to render noble deeds concealed. These statements are intended to be thought of in connexion, as the repetition of *θέμεν* in the same foot of the same line indicates. If time cannot undo, how much less can the backbiters hide ? (3) Mezger noticed the correspondence of *χαρμάτων* (l. 19) with *χαρματ'* (l. 99).

The sins of the wicked cause woes (*πήματα*) ; Thêron suffered such woes (*cf.* l. 52, *δυσφρονῶν*) ; but the woes have

been surpassed by the joys, and forgotten; and the joys are without number. It follows that the woes are not innumerable, and therefore that the sins of the wicked can be counted. This is perhaps indicated by the correspondence of φράσαις in l. 60—

τὰ δ' ἐν τῷδε Διὸς ἀρχῇ
ἀλιτρά κατὰ γὰρ δικάζει τις ἐχθρῷ
λόγον φράσαις ἀνάγκη,

with φράσαι, l. 100.

III. The first Nemean ode is in honour of a chariot victory of Chromios of Aitna. The victor is compared to Hēraklēs, whose prowess in the cradle is recounted in the σφραγίς (ll. 33–72); and as Amphitryon stands amazed at his son's achievement in throttling the serpents (ἔστα δὲ θάμβει δυσφόρῳ, l. 55), so the poet stands at the doors of Chromios (ἔσταν δ' ἐπ' αὐλείαις θύραις, l. 19) in honour of his victory. Mezger pointed out that ἔσταν and ἔστα respond, in accordance with Pindar's usage.

Pindar, however, does not definitely state that he is instituting a parallel between Hēraklēs and Chromios. His transition (l. 33) is merely ἐγὼ δ' Ἡρακλέους ἀντέχομαι προφρόνως ἐν κορυφαῖς ἀρετῶν μεγάλαις. It is true that the significance noticed by Mezger in the responsion of ἔσταν and ἔστα implies this parallel; but at the same time the validity of the assumption of such a significance depends on the truth of the hypothesis that the parallel is intended. I believe that Pindar has indicated it clearly by the use of a strange word, which, on account of its strangeness, suffered a slight corruption. The battle with the snakes is described as follows:—

(l. 43) ὁ δ' ὄρθον μὲν ἀντεινεν κάρα πειρᾶτο δὲ πρῶτον μάχας
 δισσαῖσι δοιοὺς αὐχένων
 μάρψαις ἀφύκτοις χερσὶν εἰς ὄφιας.
 ἀγχομένοις δὲ χρόνος
 ψυχὰς ἀπέπνευσεν μελέων ἀφάτων.

The two last lines are thus explained by Mezger: 'indem sie gewürgt wurden, blies die Zeit ihre Seelen aus den unsagbaren Gliedern = die lange Zeit des Würgens raubte ihnen den Athem—insolens sane dicendi genus sed necessarium—v. Leutsch.' It certainly seems a very unnatural way of saying ἀγχόμενοι δὲ χρόνῳ ψυχὰς ἀπέπνευσαν μελέων ἀφάτων. The objection is that χρόνος, the longstrangling process, is an external force; whereas the subject of ἀποπνέω should be the organism that expires, or at least something not external to it. A proposal of L. Schmidt, usually passed over in contempt, is, I believe, the true reading: χρόμος¹, a change which involves merely the substitution of M for N. The gurgling hiss in the throats of the snakes in their death-pang is said, poetically, to expire the breath of life from their limbs. χρόμος suggests Χρόμιος, and that was why Pindar used it. And it is important to observe that, in the act of conveying undermeanings by paronomasia, the rarity of a word was an advantage; for a rare word naturally attracts attention to itself, is noted, and borne in mind.

But the question arises: Why does Pindar remind the hearer of Chromios just at this point—the death of the two snakes? It might seem that this was the most inappropriate place for such a reminder that Pindar could have chosen; for assuredly no parallel can be drawn between the victory of Chromios and the throttling of the snakes. And this difficulty suggests another question: Why does Pindar give so much prominence to this incident, and pass over the rest of Hêraklês' life, in which we might expect he could have found apter points for comparison, in a few lines?

¹ Hêsybios, χρόμος· ψόχος· ψόφος ποίος. οἱ δὲ χρεμετισμός. For ψόχος, which gives no meaning, ἄχος was suggested by Guyetus. May Hêsybios

have written—χρόμος (ψυχὰς ἀπέπνευσεν)· ψόφος ποίος? He also gives the glosses χρόμοις· χρεμετισμοῖς and χρόμη· φρυγμός. δρυή. θράσος.

In order to solve this problem, we must notice that Chromios had suffered from the unkind words of censorious persons. This is stated quite directly in ll. 24, 25. Pindar stands at the door of the hospitable Chromios :

ἔνθα μοι ἀρμόδιον
 δαίπνον κεκόσμηται, θαμὰ δ' ἄλλοδαπῶν
 οὐκ ἀπείρατοι δόμοι
 ἐντί· λέλογχε δὲ μεμφομένοις ἐσλοῦς ὕδωρ καπνῷ φέρειν
 25 ἀντίον· τέχνη δ' ἑτέρων ἕτεραι· χρηὶ δ' ἐν εὐθείαις
 ὁδοῖς στείχοντα μάρνασθαι φνῶ.

The close connexion of the clauses seems to imply that ἄλλοδαπῶν refers to the censorious critics (μεμφομένοις) : they have enjoyed his hospitality. Bergk boldly reads ἐχθοδαπῶν. The words λέλογχε δὲ, κ. τ. λ., have been well explained by Mezger : those who blame good men merely pour oil, as we say, on fire ; or literally, it is the lot of those who blame good men to carry water against smoke—instead of quenching, they increase it.

Let us turn now to the prophecy which the seer Teiresias prophesied concerning the deeds of Hēraklēs' manhood. He declared (l. 61) :

ὅσους μὲν ἐν χέρσῳ κτανῶν
 ὅσους δὲ πόντῳ θῆρας αἰδροδίκας
 καί τινα σὺν πλαγίῳ
 65 ἀνδρῶν κόρῳ στείχοντα πανεχθρότατον
 φῶσέ νιν δώσειν μῶρῳ.¹
 καὶ γὰρ ὅταν θεοὶ ἐν πεδίῳ Φλέγρας Γιγάντεσσιν μάχην
 68 ἀντιάζωσιν, βελῶν ὑπο ῥιπαῖσι κείνου φαιδίμαν
 γαῖα πεφύρσεσθαι κόμαν
 ἔνεπεν.

¹ The MSS. reading τὸν ἐχθρότατον followed Boeckh in reading μῶρῳ ; . . . μῶρον, cannot be correct. Many πανεχθρότατον is due to a hint from Kayser.

Observe that *ἀντίον* (25) occupies the same position in the last line of strophē β' that *ἀντιάζωσιν*¹ occupies in the last line of ant. δ'. This indicates a parallel in the apprehension of which there is no difficulty. The opposition between the good men and their detractors is compared to the war between the gods and giants.

This parallelism also affords us a clue as to the identity of the backbiters of Chromios. *θῆρας αἰδροδίκας* and *τινα σὺν πλαγίῳ κόρῳ στείχοντα* forcibly remind us of the *κόρος οὐ δίκῃ συναντόμενος* of the *κόρακες*, who are attached in the second Olympian ode, as calumniators of Thêrôn, and who have been brilliantly identified by Mr. Verrall with Korax and Teisias.

This is confirmed by l. 25, *τέχνη δ' ἐτέρων ἔτεραι* [an allusion to the treatises on rhetoric which were entitled *τέχναι*] *χρὴ δ' ἐν εὐθείαις ὁδοῖς στείχοντα μάρνασθαι φυᾶ*. The man 'who walketh in straight ways' is the opposite of the man 'who walketh with crooked envy,' *σὺν πλαγίῳ κόρῳ στείχοντα* (l. 65); just as he who depends on his own nature (*φυᾶ*) is opposed to him who relies on the resources of art (*τέχνη*). So, too, in the passage referring to the rhetors in the second Olympian, it is said that 'wise is he who knoweth many things by nature,' *σοφὸς ὁ πολλὰ εἰδὼς φυᾶ* (l. 86).

If I am not mistaken in my interpretation of these allusive indications of the subtle poet, we are now in a position to understand his motive in introducing the tale of the snakes—a particular example of the *θῆρες αἰδροδίκαι*. We are struck by the emphatic manner in which their number is emphasized:

δισσαῖσι δοιὺς αὐχένων
μάρψαις ἀφύκτως χερσὶν ἑαῖς ὄφιας,

¹ This is one of the many instances of his own rule which Mezger did not notice.

‘in his two hands two snakes,’ one in each hand. The two snakes are the two teachers of rhetoric, Korax and Teisias; Chromios is to crush them as Hēraklēs crushed the snakes; and hence the rare word *χρόμος* is introduced at this point to indicate the application of the tale.

It is a peculiarity of this ode that it closes with the end of the myth. The motive of this has been well brought out by Mezger. ‘The poet did not wish to disturb the indefinite outlook into the distance—into a surpassingly glorious future—by recalling the thoughts of the hearers back into the sphere of the living, who, even if they are favoured enough to celebrate a festival of victory, must ever remain *πολύπονοι*.’ Yet, even in the peace of this heavenly resting-place which Hēraklēs won, we are reminded by a single slight hint of the rest of Chromios at Syracuse. The last words of the poem, *σεμνὸν αἰνήσειν δόμον*, suggest the first words, *ἄμπνευμα σεμνὸν Ἀλφειοῦ*.

IV. The second Nemean ode contains a well-known instance of paronomasia; but Mezger was the first to understand its significance. The ode is in honour of a pankration victory of Timodēmos, son of Timonoos. In the second strophe, having foretold future victories, Pindar says :—

ἔστι δ' οἰκός
ὄρειαν γε Πελειάδων
μὴ τηλόθεν Ὀαρίων' ἀνείσθαι.¹

‘It is natural that Orion should rise not far from the Peleïades *ὄρειαι*’: it is natural, namely, because the names are similar in sound. But what has this similarity to do with the victories of Timodēmos? Mezger has pointed out that the name Timodēmos, mentioned in the next line but one, recalls the already-mentioned name of his father, Timonoos.

¹ *ἀνείσθαι*, the reading of three good MSS. (Vatican B, Medicean B, Augustus B), has been adopted by Bergk in his 4th ed.

The attention is thereby called to the meaning of the name. Pindar then declares that his very name indicates that Timodēmos is a vessel born to honour, and will imitate his father, and maintain the prestige of his family, the Timodēmidai (l. 18).

In l. 15 we read :

ἐν Τρωίᾳ μὲν Ἑκτωρ Αἴαντος ἄκουσεν.

ἄκουσεν is justly rejected by Bergk as a gloss on the true reading ἐπαῖς, which can be restored, with the utmost certainty, from the scholion, ἤσθετο τῇ πείρᾳ, ὅτι ἡ Σαλαμίς φέρει ἄνδρας ἀγαθοὺς· ὡς καὶ Ὅμηρος· τοὶ δὲ πληγῆς αἰόντες ἀντὶ τοῦ αἰσθόμενοι. As the motive of the ode turns on the meaning of names, I have no doubt that here too Pindar intends to suggest that Αἴας meant 'he who causes to perceive.'

V. In the third Nemean hymn, which celebrates a victory of Aristokleidēs of Aigina in the pankration, a passage occurs which immediately suggests the attack upon Korax and Teisias in the second Olympian:

(l. 80) ἔστι δ' αἰετὸς ὥκως ἐν ποτανοῖς
ὃς ἔλαβεν αἶψα τηλόθε μεταμαιόμενος δαφονὸν ἄγρην ποσίν·
κραγέται δὲ κολοιοὶ ταπεινὰ νέμονται.

All commentators concur in the opinion that Pindar is the eagle, and rival poets the jackdaws (cf. *Ol.* ii. 87)—perhaps Simonidēs and Bakchylidēs.

Our attention is arrested by the word *κραγέται*, which occurs nowhere else. (In Philostratos we find it, but he is referring to this passage.) I believe that here too the rare word, most probably coined by Pindar, is used designedly. It is intended to suggest Akragas; *κραγέται κολοιοί* are the daws of Akragas.¹ Korax and Teisias

¹ The difference in quality of 'Ακράγας and κρᾶγέτης is no objection.

made their head-quarters at Akragas, at the court of Thêrôn, as we can infer from the second Olympian.

This reference gives special point to ll. 40, 41, in which natural ability is contrasted with acquired learning: *ὃς δὲ διδάκτ' ἔχει ψεφεινὸς ἀνὴρ ἄλλοτ' ἄλλα πνέων οὐ ποτ' ἀτρεκέϊ κατέβα ποδὶ μυριαῶν δ' ἀρετᾶν ἀτελεῖ νόψ γίνεται*.¹ In the context, and primarily, these words refer to Pêleus, Telamôn, and Achilleus, and thereby to Aristokleidês, who is compared to them; but they are intended to have a secondary application also.

It may be added, that it is characteristic of the *κολοιοί* 'to flock together'; the eagle is single. Now observe that Pindar lays especial stress on the achievement of their exploits by Hêraklês, Pêleus, and Achilleus, single-handed. (1) Hêraklês, *ἰδία τ' ἐρεύνασε τεναγέων ρόας* (l. 24). (2) Pêleus, *ἰωλκὸν εἶλε μόνος ἄνευ στρατιᾶς* (l. 34). (3) Achilleus killed the stags, *ἄνευ κυνῶν δολιῶν θ' ἐρκέων*—without the aid of art—*ποσσὶ γὰρ κράτεσκε* (l. 51). The eagle, moreover, is *ὥκὺς ἐν ποτανοῖς*, therein like Achilleus, and also in the swift seizure of the prey—*δαφοινδὸν ἄγραν ποσίν*: cf. l. 46, *μάχῃ λεόντεσσιν ἀγροτέροις ἔπρασσε φόνον*.

Aristokleidês was the son of Aristophanês, and the last two lines of the ode contain a play on both names:

*τίν γε μὲν εὐθρόνου Κλειοῦς ἐθελόισας, ἀεθλοφόρου λήματος ἔνεκεν
Νεμέας Ἐπιδανρόθεν τ' ἀπὸ καὶ Μεγάρων δέδορκεν φάος.*

VI. The seventh Nemean ode, in honour of the boy Sôgenês, who won a victory in the Pentathlon, is generally pronounced to be one of the most difficult Pindaric odes. Let us begin with lines 24 *sqq.*:

¹ The million *ἀρεταί* are opposed to the four *ἀρεταί* (one of boyhood, one of manhood, one of advanced age—illustrated respectively by Achilleus,

Telamôn, and Pêleus—and one of all ages), mentioned in l. 74. Aristokleidês possessed these virtues at the various periods of his life.

εἰ γὰρ ἦν
 ἐτὰν ἀλάθειαν ἰδέμεν οὐ κὲν ὄπλων χολωθείς
 ὁ κάρτερος Αἴας ἔπαξε διὰ φρενῶν
 λευρὸν ξίφος· ὃν κράτιστον Ἀχιλλέος ἄτερ μάχα, κ.τ.λ.

The heart of most men, he says, is blind; for had it been possible to see the real truth—ἐτὰν is Bergk's brilliant emendation for the senseless ἐάν—strong Aias would not, in wrath about the armour, have fallen on his sword. The question is, what was the real truth which the blind multitude of judges did not see? ἐτός is not a usual word; it is meant to fix the attention on something a little below the surface—the significance of the name Aias.¹ Aias resembles Αἰάκος, and indicates that he was a true Aiakid, and on that account naturally resembled Achilles in καρτερία.

This is not without its application to Sôgenês and his family, the Euxenidai; and the application is indicated in lines 61–63:

ξείνός εἰμι· σκοτεινὸν ἀπέχων ψόγον,
 ὕδατος ὥτε ῥοὰς φίλον ἐς ἄνδρ' ἄγων
 κλέος ἐτήτυμον αἰνέσω· ποτίφορος δ' ἀγαθοῖσι μισθὸς οὗτος.

The ἀνὴρ φίλος is Theariôn, the father of Sôgenês; and the lines refer back to a passage in the first antistrophê (11–13): εἰ δὲ τύχη τις ἔρδων μελίφρον' αἰτίαν ῥοαῖσι Μουσᾶν ἐνέβαλε· ταῖς μεγάλαι γὰρ ἀλκαὶ σκότον πολλὸν ὕμνων ἔχοντι δεόμεναι. (This comparison supports the MSS. σκοτεινόν, which has been suspected on account of the metre, in l. 61.) κλέος ἐτήτυμον is the true renown of the Euxenidai, which is signified in their name: an implication for which the immediately preceding ξείνός εἰμι prepares. Pindar

¹ The discovery of Mr. Verrall as to the use of ἔτυμος in Aischylos confirms this. Another illustration of this use may be found in Aristophanês, *Peace*, 114: ἄρ' ἔτυμός γε . . . φάτις ἥκει ὥς

σὺ . . . ἐς κόρακας βαδιεῖ μεταμόνιος. The supposed prophecy is to be fulfilled in the literal, not merely the figurative, sense of ἐς κόρακας.

then proceeds to set forth in what this renown consists, but in his usual indirect manner.

Hêraklês was worshipped in Aigina as the guest friend of Aiakos and the Aiakidai. Observe the manner in which Pindar introduces the hero. He begins with Zeus, the god worshipped at Nemea; Zeus begat Aiakos—

ἔφ' μὲν πολίλαρχον εὐωνύμῳ πάτρῃ, Stroph. ε'.
86 Ἡράκλεες, σέο δὲ προπρεῶνα μὲν ξείνον ἀδελφείον τ'.

ξείνον occupies the same place in verse 86 as προξενία in verse 65 :

ἔων δ' ἐγγὺς Ἀχαιὶς οὐ μέμψεται μ' ἀνὴρ
65 Ἴονίης δ' ὑπὲρ ἄλλος οἰκῶν προξενία πέποιθ'.

Pindar thus strongly emphasizes that the Euxenidai naturally keep alive the relations of hospitality with Thebes, begun by Aiakos and Hêraklês the Theban, whose sanctuary adjoins their house (l. 94) : so the poet himself, being a Theban, is now their friend and πρόξενος. The strange word προπρεῶνα (which I have proposed to identify with the Latin *proprius*¹) gives peculiar emphasis to ξείνον.

It is plain from the tenor of several passages in the ode (esp. σκοτεινὸν φῶγον, l. 61) that Theariôn and Sôgenês suffered from the ill-will of detractors (cf. Dissen, *ad carmen*). In the same way Aias had suffered, because men's hearts were blind, and they were led astray by the plausible Odysseus. The parallel is not exact, for Pindar could not say that Aias was injured by detractors, who wrote of him; but he makes the point he intends with great cunning. 'I imagine that the sweet verses of Homer made the sufferings of Odysseus greater than they really were. For on the surface of his falsehoods and winged craft there is a sort of speciousness; and cunning poetry (σοφία) leads astray with tales; and the hearts of most men

¹ See Bezzenberger's *Beiträge zur Kunde der indogermanischen Sprachen*, B. xi. s. 332.

are blind' (ll. 21-24). For if they could have seen below the surface, they would not have adjudged the arms to Odysseus, but to Aias.

Pindar contrasts himself with the men of blind heart. For in l. 65 he says: *ἐν τε δαμόταις ὄμματι δέρκομαι λαμπρὸν, οὐχ ὑπερβαλὼν, κ.τ.λ.* . . . *μαθὼν δέ τις ἂν ἐρεῖ, εἰ παρ μέλος ἔρχομαι ψάγιον ὄραρον ἐννέπων*—that is, he does not employ that σοφία which κλέπτει παράγοισα μύθοις (l. 23). It is probably not undesigned that men blind of heart are spoken of immediately after the reference to Homer, who, according to the legend, was blind. Pindar does not forget the ancient contest between Homer and Hesiod, and his sympathies are entirely with Hesiod, who was his countryman, and from whom he constantly quotes; for example, in this ode, l. 87, *φαῖμέν κε γείτον' ἔμμεναι, κ.τ.λ.*, refers to the *Works and Days* (346):

*πῆμα κακὸς γείτων ὅσσον τ' ἀγαθὸς μέγ' ὄνειρα,
ἔμμορέ τοι τιμῆς ὅστ' ἔμμορε γείτονος ἐσθλοῦ.*

It is said that Pindar had given offence to the Aiginetans by speaking lightly of Neoptolemos: he had said of him *ἀμφιπόλοισι μαρνάμενον μοιριᾶν περὶ τιμᾶν ἀπολωλέναι* (Frag. 52, Bergk⁴). In the seventh Nemean he defends himself against this charge, and praises Neoptolemos (ll. 31-50).

97 *τὸ δ' ἐμὸν οὐ ποτε φάσει κέαρ
ἀτρόποισι Νεοπτόλεμον ἐλκύσαι
ἔπεσι· ταῦτ' ἀ τρις τετράκι τ' ἀμπολεῖν*
100 *ἀπορία τελέθει, τέκνοισιν ἄτε μαψυλάκας, Διὸς Κόρινθος.*

From the last two lines we may conclude that Pindar had already answered the charge before, perhaps more than once. Now it seems to me exceedingly probable that Pindar was attacked by rivals for his utterance about Neoptolemos in the Paian; this supposition will give precision to the vague idea that he gave offence to Aiginetans. If Pindar did not answer his rivals' charges, they would

naturally be employed by Aiginetan families in preference to Pindar. His first answers seem to have been met with renewed attacks, on the ground that his words were irrevocable: he now says that it is embarrassing to repeat the same words thrice or four times—*Διὸς Κόρινθος*—as you repeat stories to children. It seems rather strange to say, ‘as one who vainly barketh (repeats the same words) to children,’ and we might well feel disposed to admit Schneider’s slight alteration to *μαψυλάκαις*, ‘to children who whine for nothing.’ Now, *μαψυλάκας* is a strange word, and makes us suspect that Pindar had some not quite obvious meaning. I believe that in this word we have the clue to the particular rival poet at whom Pindar is aiming his shafts. *μάψ* and *μαψιδίως* are words appropriate to wild and vain talk or action; for example, the talk or action of one under the influence of wine. I conjecture that *μαψ-ῦλάκας* is an allusive parody on the name *Βακχ-ῦλίδης*; the words are metrical equivalents.

Further, *Διὸς Κόρινθος* need not be the words said to the children (‘once upon a time there was a son of Zeus’¹), but are rather a proverbial quotation to signify the sort of palinode that Pindar was making: Korinthos was really the *son of Zeus*. I think this will be clear if we glance back at Epode 8. Neoptolemos was the son of Achilleus, who was the son of Pélēus, who was the son of Aiaikos; and we have in Epode 8 a strong assertion of the fact that Aiaikos was the son of Zeus (ll. 80, *sq.*)—‘It is meet to sing of the king of the gods . . . for they tell that *he begat Aiaikos*,’ *λέγοντι γὰρ Αἰακὸν νιν ὑπὸ ματροδόκοις γοναῖς φυτεῦσαι*—the last line of the fourth Epode, as l. 100 is the last line of the fifth. That the divine birth of Aiaikos is mentioned for the sake of his descendant Neoptolemos is indi-

¹ I borrow this rendering, in accordance with usual interpretation, from Mr. Tyrrell, whose brilliant lectures on

the Nemean and Isthmian odes it was my privilege to attend five years ago.

cated by the use of δάπεδον (βασίλῃα δὲ θεῶν πρέπει δάπεδον ἂν τόδῃ γαρύμεν ἄμερᾳ ὅπῃ), which, in l. 34, is used of the resting-place of Neoptolemos—ἐν Πυθιοῖσι τε δαπέδοις κείται.

But the myth of Neoptolemos is not introduced without bearing a reference to the Euxenidai, the clan of the victor. Neoptolemos was king in Molossia for a short time (l. 38)—

ἀτὰρ γένος αἰεὶ φέρειν
τοῦτό οἱ γέρας,

and the wish is expressed for the family of Sôgênês in l. 100—

παῖδων δὲ παῖδες ἔχουσιν αἰεὶ
γέρας τό περ νῦν καὶ ἄρειον ὄπιθεν.

And here we must notice the parallelism between the invocation to Hêraklês in the σφραγίς (ll. 94-101) and that to Eleithuia in the ἀρχά. (1) Hêraklês is bidden to invoke 'the husband of Hêra'; Eleithuia is 'the daughter of Hêra.' (2) ἐμπεδοσθενέα βίοτον, l. 98, and μεγαλοσθενέος Ἦρας, l. 2. (3) ἐλάχομεν ἀγλαόγυιον Ἦβαν, l. 4; βίοτον ἀρμόσαις ἦβα, l. 98. (4) Μναμοσύνας ἔκατι λιπαράμπυκος, l. 15; λιπαρῷ τε γῆραϊ διαπλέκειν—same line of antistrophe. (5) ταῖ μεγάλαι γὰρ ἀλκαί, l. 12; βροτοῖσιν ἀλκάν—exact correspondence noticed by Mezger.

I believe that Pindar refers especially to the fact that Theariôn, the father of Sôgênês, employed him, in spite of the malevolence of his rivals, to compose the ode. For immediately before his mention of Homer, and men blind of heart, he says :

σοφοὶ δὲ μέλλοντα τριταῖον ἀνεμον
ἔμαθον οὐδ' ὑπὸ κέρδει βλάβειν, επ. α'.

and immediately before the passage in which he promises to keep away dark blame, and says ὕμνῳ δέρομαι λαμπρόν, he tells Theariôn that to him Fate

τόλμαν τε καλῶν ἀρομένη
σύνεσιν οὐκ ἀποβλάπτει φρενῶν.

We are now in a position to understand the subtle manner in which Pindar has interwoven an answer to the detractions of his own rivals with a defence of the Euxenidai against their detractors. There are three mythical relations: that of Aias, that of Neoptolemos, that of the birth of Aiakos and his friendship with Hêraklês. The first of these, as we saw, is introduced by a hit at the deceits of poets, and bears itself application to the Euxenidai. The second has the double side also, containing a reference to the Euxenidai, and replying to the poet's enemies. The third legend has two parts: Aiakos was the son of Zeus, and Aiakos was the great friend of Hêraklês. The friendship of the heroes illustrates and gives a reason for the friendship of the Theban Pindar with the Euxenidai of Aigina. The birth of Aiakos has two applications, one of which we have already explained; the other leads us to a new point.

The motive of the invocation of Eleithuia in the first strophê is one of the problems which this ode presents. I would put forward the conjecture that Sôgenês was born when his father Theariôn was advanced in years and had already despaired of having issue. I rest this conjecture mainly on lines 52, 53:

ἀλλὰ γὰρ ἀνάπανσις ἐν παντὶ γλυκεῖα ἔργῳ· κόρον δ' ἔχει
καὶ μέλι καὶ τὰ τέρπν' ἄνθε' Ἀφροδίσια.

The significance of καὶ μέλι is explained by the corresponding verse in the first antistrophê: εἰ δὲ τύχῃ τις ἔρδων μελίφρον' αἰτίαν ῥοαῖσι Μοισᾶν ἐνέβαλε. The obvious meaning is, that it was a considerable time since the Euxenidai had obtained a victory at the public games. Similarly, I believe τὰ τέρπν' ἄνθε' Ἀφροδίσια ('der Liebesgenuss—nicht "die Rosen" wie Fennell erklärt,' Mezger) means that as the victory of Sôgenês had come late, his birth had come late too. This will explain the invocation of Eleithuia;

it will illustrate ll. 91, 2 : *ναίειν πατρὶ Σωγένης ἀταλὸν ἀμφέπων θυμὸν προγόνων ἐκκτήμονα ζαθέαν ἀγυιάν*, and the constant allusions to the continuation of Aiakid line in the ode ; it is confirmed by the responsion in line 74 :

εἰ πόνος ἦν τὸ τερπνὸν πλέον πεδέρχεται,

which Mezger pointed out, but did not explain satisfactorily. After the grief of childlessness the joy of having a son was greater ; and this application is intended, in line 74, for Theariôn, while for Sôgenês (as well as for Theariôn) the delight is the victory after toil.

VII. In the second Isthmian ode Pindar contrasts the mercenary character of the poets of his time with ancient poets. The latter he compares to warriors ; they ascended into the chariot of the muses with their lyre, and shot swiftly, as from a bow, hymns sweet as honey in praise of beautiful boys (*strophê α'*) ; the former, the modern singers, he compares to artisans who work for money—the Muse is *φιλοκερδῆς* and *ἐργάτις*. The *Μοῖσαι χρυσάμπυκες* of old days are contrasted with the *ἀργυρωθεῖσαι πρόσωπα ἀοιδαί* (the metaphor evidently from statues) of his own time. Then he says, l. 9 :

*νῦν δ' ἐφίημι τὸ τῶργείου φυλάξαι
ῥῆμ' ἀλαθείας ἐτᾶς ἀγχιστα βαῖνον,
χρήματα χρήματ' ἀνὴρ, ὅς φᾶ κτεάνων θ' ἄμα λειφθεὶς καὶ φίλων.*

'But now the Muse bids us observe the saying of the Argive man, who, abandoned at once by his wealth and his friends, said, Money, money makes a man, as a word that approaches very nigh to real truth.' It is generally supposed that this quotation has no special application to the present context ; that it merely means ' 'tis a mercenary world, and act accordingly.' But Pindar chooses his words carefully, and uses his quotations with precision ; so that we feel constrained to ask what is the *ἐτὰ ἀλαθεία* (*etās* is

Bergk's certain completion of the metrically deficient line), to which this saying approaches nigh, but does not reach. As Aristodemos said, a man is valued by money; so Pindar says, a poem is valued by money. How would he have expressed that, with a play upon words—*ἐταῖς* having the force which Mr. Verrall has proved to belong to *ἐτυμος* in Aischylos? Obviously by *χρήματα ῥήματα*.

There is another play on words in this ode. In l. 23 we read of the *σπονδοφόροι Κρονίδα Ζηνὸς Ἀλείοι*, and l. 27 we have *γαῖαν ἀνὰ σφετέραν, τὰν δὴ καλίοισιν Ὀλυμπίου Διὸς ἄλσος*. This relative clause has no point except we understand Pindar to refer to a connexion between *Ἀλείοι* and *ἄλσος* (*cf.* above, p. 187).

VIII. In the second Pythian ode in honour of Hiero, Bergk has made an important contribution to the comprehension of a difficult passage by a simple change of punctuation. The common reading in l. 72 is:

γένοι' οἷος ἐσσί μαθών· καλὸς τοι πίθων, παρὰ παισὶν αἰεὶ
καλός.

Bergk has simply placed the colon before *μαθών*, and thereby obtained excellent meaning:—‘Mayst thou prove thyself, what thou art (by nature). The ape truly is fair when it has been trained (*μαθών*), yea, ever fair among children.’ *μαθών* is emphatic; Pindar is expressing his favourite opposition between natural endowments (*φύα*) and skill hardly acquired by long study, whose possessor in the end remains only an ape. This interpretation is borne out by the following words:

ὁ δὲ Ῥαδάμανθης εὖ πέπραγεν ὅτι φρενῶν
δαχε καρπὸν ἀμωμητὸν, κ.τ.λ.

Radamanthus has not been mentioned before: why is he especially selected? On account of his name, which Pindar associates with ‘ready learner,’ ὁ ῥαδιῶς μανθάνων. He

typifies those to whom ability and correct judgment are natural, who require no long teaching like the ape. Pindar is doubtless thinking of some of his rivals.

In l. 17 of the ode there is another paronomasia. We read that the people of Kypros celebrate Kinyras, whom golden-haired Apollo loved passionately, the favourite priest of Aphrodite—*ἱερέα κτίλον Ἀφροδίτας*, the expression indicating that Kinyras is compared to *ἱέρων*.

IX. The ninth Pythian ode contains unmistakable references to the intended marriage of Telesikratēs: in this commentators are agreed. I would further conjecture that the maiden whom he desired to wed was the daughter of one who was at enmity with his own family. Compare l. 93 :

τοῦνεκεν εἰ φίλος ἀστῶν εἴ τις ἀντάεις, τό γ' ἐν ζυνῷ
 πεποναμένον εὖ
 μὴ λόγον βλάπτων ἀλίοιο γέροντος κρυπτέτω.
 κείνος αἰνεῖν καὶ τὸν ἐχθρόν
 παντὶ θυμῷ σὺν γε δίκῃ καλὰ ῥέζοντ' ἔννεπεν.
 πλείστα νικάσαντά σε καὶ τελεταῖς
 ὥριας ἐν Παλλάδος εἶδον ἄφωνοί θ' ὥς ἕκαστα φίλτατον
 παρθενικᾷ πόσιν ἦ
 100 υἱὸν εὖχοντ' ὦ Τελεσίκρατες ἔμμεν.

This, I would suggest, is the reason for introducing the sayings of the old man of the sea, and the suggestion is confirmed by another consideration.

The word *ἀντάεις*, equivalent in meaning to *ἀνταῖος*, hostile, is, as far as I know, *ἄπαξ εἰρημένον*: it arrests the ear, and has, I believe, a particular significance. Four verses further (l. 104) Pindar begins the story of the suitors who went to Irasa to woo a Libyan woman, the daughter of Antaios :

οἱοὶ Λιβύσσης ἀμφὶ γυναικὸς ἔβαν
 Ἴρασα πρὸς πόλιν Ἀνταίου μετὰ καλλίκομον μναστήρης ἀγακλέα
 κούραν.

I think it will be plain to those familiar with Pindar's manner, that ἀνταίεϛ was introduced because the father of Telesikrates' beloved, to whom Antaios would correspond in the story, was hostile to him.

In conclusion, I would remark that Pindar himself in certain passages seems to refer to the habit of speaking by indirections, which makes his odes difficult to comprehend. In the sixth Olympian ode he calls Aineas, who was to bear the ode to Agésias, the victor in whose honour it was composed, the skytalê of the Muses :

ἔσσι γὰρ ἄγγελος ὀρθός
ἡϊκόμων σκντάλα Μοισᾶν, γλυκὺς κρατὴρ ἀγαφθέγκτων ἀοιδᾶν.

The skytalê means more than a messenger—ἄγγελος; it can only mean (except we suppose that Pindar uses words at random) that Aineas possessed the clue to certain significances in the ode not obvious to the ordinary hearer. These significances he would impart to Agésias.

A passage in the second Olympian ode bears on the same matter :

πολλά μοι ὑπ' ἀγκῶνος ὠκία βέλη
ἔνδον ἐντι φαρέτρας
φωνάεντα συνετοῖσιν· ἐς δὲ τὸ πᾶν ἐρμηνέων χατίζει.

The last words might be taken as a motto for Pindar.

JOHN B. BURY.

THE ROMAN ACCOUNT-BOOKS.

EACH Roman citizen had at least two account books—
 1. *Adversaria*.—A kind of waste-book, or day-book, the Italian *Memoriale*, in which he entered day by day, according as they occurred, the several transactions in which he took part. It is especially noted, that the entries in the *adversaria* were untechnically (*negligenter*) jotted down, in no regular order (Cic. *Rosc. Com.* 2. 7); yet it is most likely that the transactions of each day were kept separate. Such would be practically the easiest way to enter these memoranda at the time of jotting them down, and would certainly be most convenient when posting the entries into the codex. Marquardt (*Staatsverwaltung*, ii. 67, note 3) supposes the *ephemerides* of Prop. iii. (iv.), 23. 20, to be the *adversaria*.

2. *The Codex Accepti et Expensi* (Cic. *Rosc. Com.* 1. 2; *Verr.* ii. 76. 186), also called *tabulae* (Unae *tabulae* proferantur, Cic. *Font.* i. 12) *codices* (Cic. *Rosc. Com.* l.c.) *domestica ratio* (Ascon. in *Verr.* p. 175), into which the entries of the *adversaria* were carefully posted each month. It undoubtedly consisted of a series of double pages—‘huic (*sc.* *Fortunae*) omnia expensa, huic omnia feruntur accepta, et in tota ratione mortalium sola utramque paginam facit’ (Plin. *H. N.* ii. 22). One page was debit (*acceptum*), the other credit (*expensum*); hence we find a single account-book called *tabulae* and *codices* in the plural. The entries were posted into the codex in a certain *ordo*, which is much insisted on as being of the essence of the codex, as opposed to the *adversaria* (Cic. *Rosc. Com.* l.c.; *Verr.* iii. 75. 175).

Now, this order was no doubt chronological, the date by year and day being given (*Dig.* 2. 13. 1. 2); but if it was no more, the codex could be regarded as little else than a fair copy of the *adversaria*; so that we may suppose it was like the Journal of modern book-keepers, except, indeed, that it had two pages, the line on the other page opposite to each entry being left blank (cf. Pagenstecher, *De Litterarum Obligatione*, p. 18), in which there are certain heads of accounts (*rationes*, Cic. *Verr.* ii. 77. 188), partly accounts with individuals, and partly accounts of separate departments of business, *e.g.* that there was a Profit and Loss account may be inferred from the common expressions *appone lucro, lucri facere, damni facere* = *lucri, damni nomine facere*, Cic. *Verr.* iii. 45. 107. Also Asconius, ad *Verr.* ii. 1. 23. 60, says: 'Moris fuit unumquemque domesticam rationem sibi totius vitae suae per singulos dies scribere quo appareret quid quisque de redditibus suis, quid de arte foenere lucrove se-posuisset et quo die, et quid item sumptus damni fecisset.' That Atticus kept a separate head for presents may be inferred from Cic. *Att.* ii. 4. 1, 'ne tu expensum muneribus ferres.' Thus, we may suppose that a citizen *paterfamilias* (a *filius familias* apparently could not keep a codex, Cic. *Coel.* 7. 17) would have a separate account, (say) for each of his wards, another for his farming operations, another for household expenses, another for money invested, and so on. (Indeed sometimes, if his concerns were extensive, he used not merely to keep separate *accounts* of, but keep separate *books* for, definite departments of his business transactions. Thus the *kalendaria* were books for the accounts of investments made and dividends received. Seneca (*Epist.* 87. 7) says of a rich man: 'Magnus kalendarii liber volvitur.') In the codex these accounts were probably kept separate, the individual entries (*nomina*, Cic. *l.c.*) under each account being arranged for the month in chronological order. For

the creditor to book a transaction, or agreement, with a person in the codex was called *nomen facere*, and constituted the ground of a literal contract. As the accounts were for the most part personal, the general term for an account was *nomen*, which was afterwards transferred, as we saw, to impersonal accounts. It was expected that the greatest care would be observed in posting up the codex; no erasures or corrections should appear (Cic. *Verr.* ii. 76. 187 ff.; i. 36. 92), and sufficient details of *each* transaction given to afford knowledge of particulars and to preclude any mistakes (Cic. *Verr.* i. 14. 36). Pagenstecher (*l. c.*) supposes that completed transactions were posted briefly and summarily from the *adversaria* into the codex, while contracts were entered with full details (*cf.* Schüler, *Die Lit. Obligatio*, p. 53). A mere entry of debt, without assigning the cause, or some details connected with it, did not constitute a debt—‘*Nuda ratio non facit aliquem debitorem, utputa cum donare libero homini volumus, licet referamus in rationes nostras debere nos tamen nulla donatio intelligitur*’ (*Dig.* 39. 5. 26). If an entry had to be made subsequently to the posting up of the codex (*e. g.* in the case of disputed claims legally settled only after long delay), a note had to be appended A. F. P. R. = *ante factum post relatum*: *cf.* Cic. *De Orat.* ii. 69. 280. The result of all this care was that with properly kept accounts the whole state of a man’s income must be apparent, and no surplus or deficiency in any department fail to come under his notice (Cic. *Clu.* 30. 82). Entries out of their proper order—that is, which were not entered under one of the usual heads of accounts in the codex, like the ‘Sundries’ of careless housekeepers, or the ‘Secret Service’ money—were called *extraordinariae pecuniae* (Cic. *Rosc. Com.* i. 4; *Verr.* i. 39. 100. 102, and scholiast). As such entries had to be made to make the books balance, the term came to have the special connotation of money used for or

acquired by dishonourable means (e.g. bribery), which would require to be veiled under this vague title. Cicero (*l.c.*) speaks of such entries as severely reprehensible (*cf.* τὸ δέον in Greek, Aristoph. *Nub.* 859: ὥσπερ Περικλῆς ἐς τὸ δέον ἀπώλεσα, and the Scholiast).

There is evidence of entry on the debit side (*acceptum ferre, referre*) of money paid back by debtors (Plin. *Epist.* ii. 4), interest received (*Dig.* 3. 5. 38), legacies received (*Dig.* 32. 29. 2), rent due on land and on buildings (*Dig.* 33. 1. 91. 3-6), price of goods sold (Cic. *Verr.* iv. 6. 12), presents received (*ib.* i. 39. 100, 102), loans received (Liv. xxvi. 36. 11): and on the credit side (*expensum ferre* or *referre*), the price of goods bought (Cic. *Verr.* i. 23. 61), presents given (Cic. *Att.* ii. 4. 1), lent-out capital (Liv. vi. 20. 6), and doubtless repayment of loans and interest thereon; in fact, all money paid out (*expensum ferre est scribere te pecuniam dedisse*, Ascon. ad *Verr.* ii. 1. 39. 102): *cf.* Rein, *Privatrecht der Römer*, p. 680.

It must not be supposed that nothing but actual cash transactions were entered in the codex. No doubt, all entries were in terms of cash; but the actual cash payments and receipts 'Dr. to Cash' and 'Cash Dr. to So-and-so' were called *Arcaria nomina* ('*Ex arca*', payment in ready money, is opposed to '*de mensae scriptura*', payment by cheque on a banker, or '*de domo*' by order on his steward: Donat. ad Ter. *Phorm.* ii. 4. 13; but *arcaria nomina* comprised all these: *cf.* Schüler, *op. cit.*, note 121). These stand opposed to the *transcriptitia nomina* (Gaius, iii. 128-131).

Transcriptitia nomina were either—(1) *a re in personam*, or (2) *a persona in personam*. In both cases it is as if an actual loan was made, and the debtor recognises that he owes a definite sum, which could be exacted by a *condictio certi*. The money is no longer owed under the consensual contract of *emptio venditio*, which could be enforced by

actions *bonae fidei*, in which equitable principles were permitted to govern the decision; but, as being assimilated to a loan, and duly entered as such, it becomes a contract to be enforced by the civil law, by actions *stricti iuris*. The latter (2) is often called *delegatio*. A owes money to B; B owes the same sum to C; B then delegates A to pay C, and then credits A, and debits C with the sum in his codex. The former (1) was a most usual form, and so natural that, according to one school, it bound foreigners (Gaius, iii. 133). Avianius, the statuarius, sells Cicero a number of statues (Cic. *Fam.* vii. 23), and writes to say that he will draw up the agreement, or bond, relative to the transaction, and enter it in the codex (*nomina facturum*) whenever it suits Cicero. The debt would be formally contracted when the entry was made, and from that date interest would run. Hence Cicero says that Avianius's proposal was most generous, so that we cannot suppose 'qua die vellem' to be a mere phrase, like our 'at your convenience'. We are told that entry in the creditor's books alone, even if there was no entry in those of the debtor, constituted the obligation, and are referred to Gaius, iii. 137, 'et in nominibus alius expensum ferendo obliget alius obligetur'. This appears to have been the law: the law had been made by the class who were usually creditors; but, practically, no one ever thought of debiting a man with a sum without his order. 'Scripsisset ille', asks Cicero (*Rosc. Com.* i. 2), 'si non iussu hominis expensum tulisset?' Now, the passage from the *Ep. ad Fam.* shows that a meeting was usual in drawing up the contract, or bond; though any mark of consent on the debtor's part, a letter, or the word of a messenger, was deemed sufficient: and most probably there were definite formulae to be used, as in the case of the *stipulatio*: see *Dig.* 44. 7. 2. 1, 2: 'Ideo autem istis modis consensu dicimus obligationem contrahi quia neque verborum neque scripturae ulla proprietas desideratur

sed sufficit eos qui negotia gerunt consentire. Unde inter absentes quoque talia negotia contrahuntur veluti per epistolam vel per nuntium: cf. Gaius, iii. 138, absenti expensum ferri potest; 136, per epistolam. Theophilus, iii. 21, says: 'Λιτερῆς ἐστὶ τὸ παλαιὸν χρῆος εἰς καινὸν δάνειον μετασχηματιζόμενον ρήμασι καὶ γράμμασι τυπικοῖς'. It appears that the creditor must have evidence by the debtor of the consent of the latter. Avianus probably credited his statutory account with the sum in question, and then, when he made the literal obligation, debited Cicero with the amount. The codex was of the nature of a cash-book, and by this double entry the balance of the codex was not altered. Savigny (*Vermischte Schriften*, i. 253) thinks that this double entry is the meaning of nomen *transcriptitium*, and this seems probable enough, though Wunderlich thinks that the novation is signified by the word. It really does not matter much, provided we allow that in the books a double entry was made.¹

It must not be supposed that every transaction entered in the *codex* became a literal obligation. For all business compacts and transactions being entered in the codex, it would follow that there would be nothing but literal obligations between man and man. Stipulations also were entered in the codex, but they were contracted *verbis*, and could not be entered into unless both parties were present, and the ground of obligation was the *words*. Evidence of

¹ Cf. Keller, *Ein Beitrag zu der Lehre von dem römischen Literalcontract*, in Sell's *Jahrbücher für hist. und dogmat. Bearbeitung des röm. Rechts*, i. 101: Ein nomen welches so entsteht, dass man den Stoff derselben auf den einen Seite des Buches *ein-schreibt* und ihn dann wieder auf die andere Seite *hinüberschreibt*, das ist eben ein nomen transcriptitium. Cf.

Schmidt, quoted on the same page, 'Qua scribendi forma (sc. Quæ mihi Titius debet ex empto eadem centum expensa fero eidem) si in Codice Romani usi sunt, sive cum Savignio mutui dationis fictionem sive cum Wunderlichio novationem factam vis per transcriptionem significari, non mag-nopere sane interest, forma transcribendi intellecta.'

stipulations being reduced to writing is found in Cic. *Topica* 26. 96; *Rosc. Com.* 13. 38: cf. Rein. p. 663. In the literal obligation, which could be entered into by both parties either present or absent, the ground of obligation was the *writing*, 'the evidence of your own tablets' (ἐκ συνθήκης καὶ ὁμολογίας τῶν οἰκείων γραμμάτων), as Theophilus (*l. c.*) says.

But we hear of transactions, especially the loan of money, between two parties being entered in the codex of a third person, or even more. 'Solent enim dicere', says Cicero (*Rosc. Com.* 1. 1), 'qui per tabulas hominis *†*citi (*honesti* and *alieni* have been suggested; perhaps *citati*, or *asciti*) pecuniam expensam tulerunt: egone talem virum corrumpere potui ut mea causa falsum in codicem referret?' In Seneca's time there appears to have been a class of men engaged in this business, called *pararii*, who were, doubtless, paid for their trouble and risk (*De Ben.* iii. 15). The transactions were of the nature of delegations *a persona in personam*, and there was doubtless some written evidence of consent on the part of the debtor to the delegation (Senec. *De Benef.* ii. 23). If there were more than one *pararius*, probably each *pararius* entered the whole sum on the debit and credit sides, just as each signatory of a bill takes the risk of the whole sum: for if we suppose continuous delegation, A delegates to B, B to C, C to D, D to E, and so on; if one link breaks the whole chain of evidence collapses. And Paulus, in the *Digest*, says (2. 14. 9. pr.): 'Si plures sint rei stipulandi vel plures argentarii, quorum nomina simul facta sunt, unius loco numerabuntur quia unum debitum est'. But a citizen sometimes lent his codex to others, to enter their contracts in. (This was often done when both parties were absent from home, and neither had his codex, Schüler, p. 51.) 'Si tibi codicem commodavero et in eo chirographum debitorem tuum scribere feceris' (*Dig.* 13. 6. 5. 8). The com-

plicated conditional pact in Cicero, *Att.* iv. 18, was entered in the books of many citizens, who would probably in Seneca's time have been called *pararii*. From the antithesis Cicero makes to *verbis* the entries seem to have been made in order to constitute a *literarum obligatio*. Rein (*Privatrecht*, p. 691) supposes it a case of delegation to *pararii*.

The codex was sufficient for the ordinary householder ; but the books of those who had very extensive concerns, such as the State,² municipalities, companies, bankers, kept regular ledgers (*rationes, libri rationum*). It is of the accounts of the bankers that we have most knowledge. Their business was considered to be conducted in the interests of the public, and accordingly they had of necessity to be very accurate in their accounts (*Ideo autem argentarios tantum neque alios ullos adsimiles eis edere rationes cogit quia officium eorum atque ministerium publicam habet causam et haec principalis eorum opera est ut actus sui rationes diligenter conficiant: Dig. 2. 13. 10. 1*). We know that the bankers made advances, took deposits, and kept current accounts with clients, just like our own ; and the account (ratio) of each client had to be kept separate (*Dig. 2. 13. 4. 1*), no doubt each account having a separate pair of pages in the ledger (*rationes tamen cum die et consule edi debent quoniam accepta et data non alias possunt apparere nisi dies et consul fuerit editus, Dig. 2. 13. 1. 2: edi autem ratio ita intellegitur si a capite edatur, nam ratio nisi a capite inspiciatur intellegi non potest, ib. 2. 13. 10. 2*). At certain times the banker sent a statement of his affairs to each client (an example of such at *Dig. 2. 14. 47. 1*). This was called *rationes reddere*, though this phrase is used in a wider sense, 'to *pay up* the balance,

² Cf. Asconius, 2 *Verr.* i. 13, p. 158: in tabulas publicas referre consueverant. Quaestores urbani aerarium curabant eiusque pecunias expensas et acceptas

(Dig. 35. 1. 82 pr.). The client, after receiving (*recipere*) his accounts, used to examine (*putare, cognoscere*) the separate items, compare the debit and credit side (*dispungere*), and, if all was found correct, add his signature (*parem rationem adscribere*, Dig. 40. 4. 22). The balance (*reliquum*: cf. *reliquari*, 'to be in arrears') was either paid up, a technical term for which was *pariare*, 'to square accounts', or probably often carried forward to a new account. Other general terms for settling accounts were *expedire* and *expungere*.

One question remains—Did the Romans keep their ledgers by double entry? I think so. We have seen that they employed, as well as personal accounts, what are called real and nominal accounts, *i.e.* accounts in which the trader's property is classified, and his gains and losses recorded—'quid quisque de rebus suis quid de arte foenere lucre seposuisset', as Asconius says. Now this is one of the chief marks which distinguish Double Entry, It is the condition without which the double entry cannot be made. 'Double entry differs from single entry chiefly in making cash, stock, goods, &c., parties, as well as persons, and in making a debtor and creditor account in every transaction' (*All about Book-keeping*, p. 33). With regard to the latter condition, turn to a notorious passage, Cic. *Font.* 1. 3. 'Assuming for a moment', says Cicero, 'that all those with whom Fonteius has had business transactions, strangers and aliens though they were, are for some mysterious reason devoted to his interests, res tamen ipsa et ratio litterarum confectioque tabularum habet hanc vim ut ex acceptis et datis quidquid fingatur aut surripiatur aut non constet appareat. Acceptas populo Romano pecunias omnes isti (*sc.* the creditors of the State) retulerunt: si protinus aliis aequae magnas aut solverunt aut dederunt, ut quod acceptum populo Romano est id expensum cuiuspiam sit, certe nihil potest esse detractum. Sin

aliqui domum tulerunt ex eorum arca e ra (probably we should read *arcae rationibus*, or else, with Mommsen, *arca, e rationibus accepti et expensi*). Niebuhr, on this passage (cf. his *Roman History*, ii. 602, note, Eng. Trans.), thinks it decisive on the question in favour of the view, that the Romans kept their accounts by what is known as the Italian method of Double Entry, and with this view Klotz (*ad loc.* vol. ii. p. 869) agrees. The double entry is strongly marked in the passage italicised. For example, a man who took a contract from the State credited the State with the sum received, and debited other accounts, personal or impersonal involved in the fulfilment of the contract, with similar sums. If the contractor had been fraudulent and appropriated the money, brought it home out of his office or business premises, and so did not enter it in his business accounts at all, yet it might be detected by his private accounts. Niebuhr says that the distinction between *solverunt* and *dederunt* is, that the former refers to personal accounts, and *dederunt* to impersonal. Probably the difference rather is, that the former is payment for work done or money owed, while the latter is giving money to enable certain portions of the work to be taken in hand. Lastly, the system of Double Entry affords the most evident means of detecting error or fraud in the case of extensive concerns. That error or fraud was easily detected in the Roman accounts is emphasized by Cicero both in the passage before us and in *Cluent.* 30. 82. That this would not be effected by single entry is strongly insisted on by Niebuhr, and Niebuhr ought to have known, as he was engaged during the best years of his life, from 24 to 33 (1800 to 1809), in high financial positions, being made in the latter year Director of the National Debt and of the Mint; and he did not publish the *Fontei*us till 1820.

THE 'SEPTEM CONTRA THEBAS'.

AS I have been favoured by Professor Tyrrell and Mr. Beare with copies of their notices of my recent book in this number, I take the opportunity of acknowledging gratefully both these, and the notice by Professor Tyrrell in the *Classical Review*. If I add a few controversial remarks, it is not so much for the purpose of defending my former opinions, as to show that I have studied their criticisms. I shall deal chiefly with the paper of Mr. Beare, as that of Professor Tyrrell on 'Translation' offers nothing for me to dispute, and the other may not be before the present reader.

On *Sept.* 100, πάταγος οὐχ ἐνὸς δορός, I called the text impossible, on the ground that '*not one*' is no synonym for '*many*'. To this Mr. Beare and Professor Tyrrell naturally demur, and the fact is, that in trying to be brief I have made myself unintelligible. What I should have said was, that '*not one*' is a proper substitute for '*many*' only under certain conditions, which this passage does not fulfil'. The convenience of a label, such as '*litotes*', should not blind us to the fact that no two phrases are for literary purposes exactly equivalent, so as to be 'substituted', like terms in Algebra. Take these three sentences: (1) The Austrians are a people of many languages; (2) London Bridge is a bridge of many arches; (3) The harp is an instrument of many strings. Now introduce '*litotes*' (of which we have two forms, *not one* and *more than one*, both represented in Greek and Latin by οὐχ εἷς, *non unus*) thus: (1) The Austrians are a people not of one

language; (2) London Bridge is a bridge not of one arch; (3) The harp is an instrument not of one string. It is obvious that, of these second forms, (1) is perfectly natural and expresses the point better than the alternative; (2) is quite possible, but would be appropriate only in special circumstances, as if, in a comparison of famous bridges, that of London were contrasted with the Rialto; while (3) is absurd and could hardly be used under any circumstances. And the reason is also obvious: it is that *the case excluded by the negative (the 'one language', 'one arch', and 'one string') is in the three examples respectively—(1) regular; (2) familiar, but not regular; (3) practically unknown.* Most peoples have one language; some bridges have one arch, and some more; no instrument (practically) has only one string. I submit that in Greek and Latin this natural condition holds good, and that οὐχ εἷς, *non unus* are not employed, unless in the circumstances *the fact of plurality or variety is to be emphasized*, and unity or uniformity would be a probable, or at the least a natural case. Thus, *consul non unius anni* means 'a consul not like other consuls, merely for a year'. In *cuius supplicio non debuit una parari simia*, &c., the point is that *one* punishment, though the severest known, would not be enough (cf. *levis una mors est virginum culpa*). So again, it is good sense to say *non unus tibi rivalis dictabitur haeres*, or *atque recens linum ostendit non una cicatrix*, or εὐδαιμονήσει δ' οὐχ ἐν ἀλλὰ μυρία, because *one* such rival, or *one* such scar, would have been more than enough, and most people have to be content with *one* happiness. So in Eur. *Suppl.* 94, οὐχ ἓνα ρύθμῳ κακῶν ἐχούσας, the speaker wishes to emphasize 'the various disorder' of the suppliants' grief, which variety he proceeds to describe in detail, and to contrast by implication with the regular decencies of common ceremony (note the words πεπλώματ' οὐ θεωρικά). So again, in Eur. *Cycl.* 514, στεφάνων δ' οὐ μία χροία περὶ σὸν κράτα τάχ' ἐξομλήσει, the use

of οὐ μίᾱ is essential to the point; the Cyclops, flushed with wine, has already a garland on his brow; and when the Chorus say that 'soon there will meet there wreaths not of one hue', *i.e.* 'of contrasted hues', it is a sinister allusion, as the context shows, to his impending punishment by the fiery stake. So again, a great majority in debate may well be called οὐ μίᾱ ψῆφος, because a bare majority of one vote would have been sufficient, and the greater superiority is a subject for special exultation. Now I meant to point out that in παράγοις οὐχ ἐνὸς δορός there is not this sort of justification for the 'litotes'; and I have not noticed, nor should expect to find, any other like example. Who would have supposed that the combatants had but *one* spear, or that, if any clashing was audible, the clashing of *one* spear only would be heard? And what therefore is the point of saying that the sound heard is 'not of one spear', or 'of more than one spear', or 'of differing spears', or even, though I should not think this a legitimate rendering, 'of many spears'? I am quite ready to believe that there is some point not yet discovered; but I could not find it, and have taken refuge in οὐ κενός as an interim expedient. But in any case I am to blame for obscurity.

The other questions raised by Mr. Beare almost all relate to passages in which I have seemed to discover in the MS. evidence of words or usages not to be found elsewhere. Mr. Beare agrees with me, that there is in general nothing surprising in such peculiarities. But it is inevitable that on any particular case there should be temporary, and even permanent, difference of opinion. The case is *ex hypothesi* without parallel, and it will always be a question whether the MS. evidence is strong enough, or the approximate parallels near enough, to justify the hypothesis. To all Mr. Beare's objections I should allow some weight, except perhaps to one. Mr. Beare objects to

οὔδαρ' (v. 259), on the ground that the first syllable of the Boeotian form οὔδαρ was short. How is this proved? Of course the diphthong itself proves nothing either way: it is short in λιγυρός, long in κοῦμα and ἀσουλία. In οὔδαρ, if we follow the analogy of ὕδαρ—and we have no other evidence—it was originally doubtful, and where the ictus of the verse falls on it, which is the case here, it was *long*. This quantity is regular in Homer, and could be used even by Aristophanes, long after the short ὕ had established itself in common speech. I see no reason to think there was any difference on this matter between older poetry in general and the old Boeotian epic poetry, from which Aeschylus, if he used οὔδαρ, must have taken it. With the Boeotian pronunciation of the word in the fifth century, whatever it was—for we really do not know—Aeschylus, I conceive, had no concern. And it is plain that, if the long quantity was possible, it was for an Attic poet decidedly preferable to the short οὔ, a sound unknown to Attic lips. On ἐπανδράς (v. 269) Mr. Beare remarks that διδράσκω always contains the notion of 'getting away, making an escape', or the like. This is true, and I overlooked it, mistranslating in consequence. But I am rather more disposed than before to think ἐπανδράς right; for if ever a man could regard his departure as an 'escape', it is Eteocles returning to the wall after the loss of so many precious minutes. Nor should I be alarmed, with Professor Tyrrell, for the dignity of the hero. Even a tragic king (if the tragedian knows his art) is apt to forget punctilio when in desperate haste. However, if ἐπανδράς does not please, it certainly cannot be proved; and ἐκθίων (v. 23) is much in the same case: there is no *cogent* objection to ἐκ θίων, and the choice seems to be as pure a question of taste as any could be. About ἐκτός (v. 251) I fear I am yet wholly impenitent. I still think ἐκτός οὐς ἀγαμάτων an impossible phrase, as impossible as

its exact equivalent, 'being out of the statues'. On the other hand, I see no reason whatever why ἐκτός should be expected to occur more than once in our collection, however correct and regular it may have been. All these active verbals in -τός are extremely rare; some of them, such as μεμπτός, unique, and for a good reason. Their ambiguity makes them unsuitable for prose; a prose writer is content with ἐχόμενος. For true archaic language they are too subtle. They belong properly to the stage of artificial poetry, not yet under the domination of a standard language—the stage of the earlier Athenian dramatists. Aeschylus, Sophocles, possibly Pindar, and the scanty fragments of sixth century poetry—out of these I should scarcely look for ἐκτός (= ἐχόμενος). How many words, perfectly good for these writers, are known to us by single specimens; how many hundreds must have wholly disappeared! As Mr. Beare notices parenthetically the rarity of the *passive* ἐκτός, it may be observed that it is in much the same case as the rest of its class, which are almost all uncommon, and out of the narrow circle of the poets occur, like ἐκτός, mostly as technical terms: ληπτός, καμπτός, βατός, πρακτός, τρεπτός, and a crowd of like derivatives from common verbs, are little or no better off for examples than ἐκτός. In prose the whole class, from a complication of causes, becomes sparse and moribund. In poetry they are, relatively to the extent of the field, quite common; and, so far as can be judged, all such forms, both passive and active, were entirely at the disposal of Aeschylus and Sophocles. Our very small collection furnishes sometimes one example, sometimes two or three; but when the figures are so low, the distribution of them is surely mere matter of accident. One new play might change the whole statistic. As to vv. 254-5, I agree with Mr. Beare, that the matter is not fully cleared up. I am glad that he thinks

the scholium worth attention, which it has not hitherto received.

Professor Tyrrell's remarks in the *Classical Review*, except so far as they coincide with Mr. Beare's, cannot conveniently be discussed in HERMATHENA. But I should like just to quote his remark on v. 1002, *τίθνηκεν οὐπερ τοῖς νέοις θνήσκειν καλόν*, because it well illustrates the conditions which govern the sort of cases here considered. The scholium informs us that this verse is imitated from Homer's *εἰς οἰωνὸς ἄριστος ἀμύνεσθαι περὶ πάτρης*. I think (and Professor Tyrrell, as I understand, does not dissent) that this comment requires us to seek another text; and I proposed *τίθνηκεν οἷσπερ ὀρνέοις θνήσκειν καλόν*, 'he hath died with such auguries as make death fair'. Professor Tyrrell would be content 'if we could be sure that *ὄρνειον*, in the sense of omen, would not have been as ridiculous to an Athenian audience' as the substitution of *aquiline eye* for *eagle eye*. The parallel is most just, and shows the doubts which beset a language without living testimony. It is impossible to know *à priori* whether *ὄρνειον*, *omen*, was admissible or not. There is nothing decisive *pro* or *con*. The question is merely whether the MS. and scholium together do not furnish evidence as good as if we had actually found *ὀρνέοις* in the text. I am disposed to think that they do.

The question of strophic correspondence and others suggested by Professor Tyrrell are too large to open now, but there will be other opportunities hereafter. It only remains to express once more my sincere thanks for the highly encouraging appreciation which I have found in Dublin.

A. W. VERRALL.

MISCELLANEA CRITICA.

ÆSCHYLUS—*Persæ*, 164.

Καὶ με καρδίαν ἀμύσσει φροντίς· ἐς δ' ὑμᾶς ἐρῶ
 Μῦθον οὐδαμῶς ἐμαντῆς οὖσ' ἀδεύμαντος, φίλοι,
 Μὴ μέγας πλοῦτος κονίσας οὐδας ἀντρέψῃ ποδὶ
 Ὀλβον δν Δαρείος ἦρεν οὐκ ἄνευ θεῶν τινος.

THE third line is unintelligible as it stands. Heimsoeth has proposed to read *δαίμων* for *πλοῦτος*; he is, I think, on the right track, but *δαίμων* is objectionable, for two reasons—first, it does not account for the corruption; secondly, there is not the antithesis between *δαίμων* and *θεῶν τις*, which, I conjecture, the true reading affords. I surmise that the line began *μη ΓΙΓΑΣ ΜΕΓΑΣ*: that *γίγας* fell out before *μέγας*; that *πλοῦτος* was stuffed in to complete the verse. Now we have the proper antithesis between the gods and their natural enemy the giants: ‘Lest some huge giant, having come in hot haste, overturn to earth with his foot the wealth which Darius raised for us with the help of the gods.’ I quite agree with Mr. Tyrrell that *οὐδας* goes with *ἀντρέψῃ*, ‘dash to earth,’ and not with *κονίσας*. Cf. *γίγας μείζων*, Theb. 411; *μεγάλους τε γίγαντας* Hesiod.

Eumenides, 272.

Ἐγὼ διδαχθεὶς ἐν κακοῖς ἐπίσταμαι
 πολλοὺς καθαρμοὺς, καὶ λέγειν ὅπου δίκη
 σιγᾶν θ' ὁμοίως· ἐν δὲ τῷδε πράγματι
 φωνεῖν ἐτάχθην πρὸς σοφοῦ διδασκάλου·

βρίζει γὰρ αἷμα καὶ μαραίνεται χερός
μητροκτόνον μῖasma δ' ἔκπλυτον πέλει.
ποταίνιον γὰρ ὃν πρὸς ἐστίῃ θεοῦ
Φόιβον καθαρμοῖς ἠλάθη χοιροκτόνοις.

Καθαρούς in the second verse is devoid of meaning here, and seems to have come from *καθαρμοῖς* in the last verse. It seems to me that Orestes intends to express this idea: 'I am acquainted with many lines of conduct.' Being 'pauper et exsul,' he stoops to everyday language, and may have even condescended to a colloquialism, to express this idea. Now I thought of reading *κοθόρνον*. 'Many styles of boot' would be a suitable proverb, provided that we could bring forward any evidence that such a proverb existed. Well, in Plautus, *Truc.* iv. 2, 51, we find something very like what I was long in search of—

(O) nihili me! perdidit omne quod fuit, fio impudens,
Nec mihi adest tantillum pensi iam quos capiam calceos.

quos capiam calceos seems to be proverbial: 'what sort of boots I shall take to,' *i.e.* what kind of life I shall take to. And so in Aristoph., *Av.* 994, the question is asked: τίς ὁ κόθορνος τῆς ὁδοῦ; 'what is the shape, the pattern of the journey?' where, however, Mr. Blaydes would read τίς ποθ' οὔρνις τῆς ὁδοῦ;

EURIPIDES—*Helena*, 302.

σμικρὸς δ' ὁ καιρὸς ἀρτ' ἀπαλλάξαι βίον.

So the MSS. *κρᾶτ'*, Nauck, from C. Keil. Read *σάρκ'*.

Ib. 441.

Menelaus, on his approach to the palace, is soundly rated by an old serving woman. He replies:

ὦ γραῖα ταῦτα ταῦτ' ἔπη καλῶς λέγεις.
ἔξεστι· πείσομαι γάρ· ἄλλ' ἄνεις λόγον.

I. write :

ὦ γράϊα ταῦτὰ ταῦτ' ἔπη κἄλλως λέγειν
ἔξεστι.¹

'You might say these same words in another way,' i.e. you might tell me to go away with more politeness and gentleness. τόνον should be read for λόγον.

Helena, 510.

κακῶν δέ θ' ἡμῖν ἔσχατον τοῖς ἀθλίοις
ἄλλους τυράννους αὐτὸν ὄντα βασιλέα
βίον προσαιτεῖν

τε, of course, is wrong in the first line, and ἡμῖν is out of place, the reflexion being general. I read :

κακῶν δὲ θημῶν ἔσχατος τοῖς ἀθλίοις, κ.τ.λ.

Juvenal's *ultimus aerumnarum cumulus* (*Sat.* 3) is a *literal* equivalent of κακῶν θημῶν ἔσχατος.

Ib. 775.

ἐνιαύσιον πρὸς τοῖσιν ἐν Τροίᾳ δέκα
ἔτεσι διήλθον ἑπτὰ περιδρομὰς ἐτῶν.

ἐνιαύσιον is corrupt. Nauck reads ναυσθλούμενος from M. Schmidt. Why not ἐν ναῦσιν ὢν? The plural is defensible. Perhaps ἐνάλιος ὢν.

Ib. 974.

ἢ τήνδ' ἀνάγκασόν γε μὴ εὖσεβοῦς πατρός
κρείσσω φανείσαν τᾶμ' ἀποδοῦναι λέχη.

Nauck reads ἥσσω for κρείσσω, suggesting also χεῖρω, and ἀπολλύναι for ἀποδοῦναι. For the latter word προ-διδόναι should be read, the usual word in such cases.

¹ So, I now see, Madvig, save that he gives πρῶτος for καλῶς.—Adv. 1, 237.

κρείσσω I regard as sound, but suggest φανῆναι for φανῖσαν, which arose from a misapprehension of the construction, which is this: 'Do not allow her to turn out *better at betraying* my bride than her pious father was.' Cf. AR. *Ach.* 232: νυνὶ δὲ κρείττων ἐστί σου Χαρινάδης βαδίζειν.

Helena, 1200.

ΘΕΟΚ. ἦκει γὰρ ὅστις καὶ τὰδ' ἀγγέλλει σαφῆ;

Nauck proposes ἀγγελεῖ. He appears to me to misunderstand the construction, which is *ποτ' ἦκει γὰρ ὅστις τὰδ' ἀγγέλλει*, 'Is a man come who announces,' *but ἦκει γὰρ, ὅστις [ἐστί] καὶ, κ.τ.λ.*: 'Is he come, whoever he is (the survivor referred to by Helen), and does he bring clear tidings of this?'

Ib. 1271.

ὥς μὴ πάλιν γῇ λύματ' ἐκβάλη κλύδων.

Read θύματ'.

Ib. 1286.

Μενέλεως δ' ἔχει πότμον
κούκ ἂν δύναίτο ζῆν ὁ καθθανὼν πόσις.

Nauck, I think, on good grounds, suspects πόσις, the sentiment being general. L. Dindorf gave ἀπαξ; Heimsoeth πάλιν. I read:

κούκ ἂν δύναίτο ζῆν ὁ καθθανὼν πόθεν;

Ib. 1421.

ΘΕΟΚ. τὰ τῶν θανόντων οὐδέν, ἀλλ' ἄλλως πόνος.

ΕΛ. ἔστιν τι κακεῖ κἀνθάδ' ὧν ἐγὼ λέγω.

By reading ὧν ἐγὼ λέγω (*i.e.* ἀλέγω) sense may be easily restored. 'Both there (among the dead) and here I have'

something to care for.' Theoclymenus understands ἐνθάδε to refer to himself. In Helen's mind it refers to Menelaus.

Helena, 1535.

ὁ δὲ πλάτην καθίστατο
ταρσόν τε χειρί.

Perhaps ἔχρει.

Ib. 1590.

δόλιος ἢ ναυκληρία,
πάλιν πλέωμεν' ἄξιαν κέλευε σύ,
σὺ δὲ στρέφ' οἶακ'.

I read ἀντίαν. The boatswain is ordered to give the signal to reverse the course of the vessel: with ἀντίαν understand ὀδόν. Nautical language is always extremely elliptical, metaphorical, and technical.

Ib. 1597.

οὐκ εἴ' ὁ μὲν τις λοῖσθον ἀρεῖται δόρυ
ὁ δὲ ζύγ' ἄξας;

For the corrupt λοῖσθον we should clearly restore some first aorist participle: θραυσθέν, κλασθέν, or θλασθέν. The Egyptians are bid to arm themselves with broken planks, and pieces of the rowing benches. Dr. Maguire proposes σχισθέν.

Herc. Fur., 257.

ὅστις οὐ Καδμείως ὦν
ἄρχει κάκιστος τῶν νέων ἐπηλυς ὦν.

Read ἐπηλύδων.

Herc. Fur., 936.

πάτερ τί θύω πρὶν κτανεῖν Εὐρυσθέα
καθάρσιον πῦρ, καὶ πόνοὺς διπλοῦς ἔχω
ἐξὸν μίᾳς μοι χειρὸς εὖ θέσθαι τάδε;

Hercules, going mad after killing Lycus, utters these words. He wildly proposes to go to Mycenae from Thebes, and to kill Eurystheus at once, so as to save himself having to purify his hands of bloodshed *twice*. I do not see either the meaning or the construction of *μίας χειρὸς*, and would read *ἐξὸν μίᾳσμα χειρὸς εὖ θέσθαι τόδε*, 'when I can put this blood-stained hand to a good use,' viz., the slaying of Eurystheus, no purification being necessary before another deed of blood.

Ib. 1351.

Hercules, on reflexion, gives up the idea of suicide as the act of a coward. He says :

ταῖς συμφοραῖς γὰρ ὅστις οὐχ ὑφίσταται
οὐδ' ἀνδρὸς ἂν δύναιθ' ὑποστῆναι βέλος.
ἐγκαρτερήσω θάνατον· εἰμι δ' εἰς πόλιν.

θάνατον is clearly a wilful correction of the copyist for *βίονον*. The copyist did not see that the sense was the paradox, 'I will manfully bear *life*,' and calling to mind *And.* 262, *ἐγκαρτερεῖς δὴ θάνατον*, where the sense is quite different, the question 'do you then brave death?' being perfectly in place, when addressed to Andromache, who had defied death—the copyist, I say, changed *βίονον*, which he did not understand, to *θάνατον*, which he did not understand either, but which seemed to him the right word after *ἐγκαρτερεῖς*. Madvig's *ἐγκαρτερήσων*, accepted by Nauck is, in my opinion, very unhappy.

Cyclops, 95.

πόθεν πάρεισι Σικελὸν Αἰτναῖον πάγον.

The double proper name is awkward, and one is probably corrupt. Either change Σικελὸν to *στουφλόν*, or *κλεινόν*, or *σκόπελον* (reading Αἰτναίου πάγον), or change Αἰτναῖον to *αἰπεινόν*.

Id. 343.

πῦρ καὶ πατρῶν τόνδε λήβητά γ' ὅς τις ζέσας
σὴν σάρκα δυσφόρητον ἀμφέξει καλῶς.

I would write *δυσρόφητον*. Ulysses is to be boiled into soup. Like J, Bagstock, he was 'tough,' as well as 'devilish sly.' As to the first line, the change of τόνδε to τόδε should be accepted, but γ' should be retained. This explanatory γε is quite common, especially when something unexpected is mentioned. ἀμφέψει for ἀμφέξει is due to Nauck.

Electra, 687.

πόθεν; τί δ' αὐτῇ σοῦ μέλειν δοκεῖς, τέκνον;
ΗΛ. Ναί καὶ δακρύσει γ' ἀξίωμ' ἐμῶν τόκων.

Read ἀξίως. Clytaemnestra's tears would be as false as Electra's travail.

Andromache, 346.

σὺ δ' ἐκδιδοῦς
ἄλλω τί λέξεις; πότερον ὥς κακὸν πόσιν
φεύγει τὸ ταύτης σῶφρον; ἀλλὰ ψεύσεται.

Porson tried to cure this violation of the pause by writing ἐψεύσεται. But this is as wanting in sense as ψεύσεται. I write ἄλλα πεύσεται, 'he will find out a very different story to be the true one': or ἀλλὰ πεύσεται, 'but he will

inquire into the matter' (*implying*, and will find out that your reason is a false one).

Andromache, 746.

ἡγοῦ τέκνον μοι δεῦρ' ὑπ' ἀγκάλαις σταθείς
σύ τ' ὦ τάλαινα.

'Why is the boy bid lead the way? Besides, ἡγοῦ does not suit σταθείς, which denotes rest. I propose εἶργον, 'shelter yourself.'

Ib. 962.

εἴτ' αὐτοῦ μενεῖς
εἴτ' ἐκφοβηθεῖς' αἰχμαλωτίδος φόβῳ
γυναικὸς οἴκων τῶνδ' ἀπηλλάχθαι θέλεις.

Read εἴτε προηθεῖς'.

Ib. 990.

ἀλλ' ὡς τάχιστα τῶνδε μ' ἔκπεμψον δόμων
μὴ φθῇ με προσβάς δῶμα καὶ μολῶν πόσις.

μολῶν is otiose after προσβάς δῶμα. The true reading is μ' ἐλών.

Ib. 1065.

ΠΗ. κρυπτός καταστὰς ἢ κατ' ὄμμ' ἐλθὼν μάχη;
ΧΟ. ἀγνοῖς ἐν ἱεροῖς Λοξίου Δελφῶν μέτα.

I have not noticed ἀγνόν joined to ἱρόν elsewhere. Perhaps ἀγμοῖς, 'amid the sacred rocks of Loxias': or ἀδύτοις.

ARISTOPHANES—*Ranae*, 19.

ὦ πρισκακοδαίμων ἄρ' ὁ τράχλος οὔτοσί
ὅτι θλίβεται μὲν, τὸ δὲ γέλοιον οὐκ ἐρεῖ.

I suggest ὅτε. This use of ὅτε is quite idiomatic. No doubt ὅτι is, in many instances, substituted for ὅτε by the

scribes, as here. But *Ach.* 400 could not be altered, and is exactly parallel: ὦ τρισμακάρι' Εὐριπίδῃ δθ' ὁ δούλος οὕτως σοφῶς ὑποκρίνεται. *δοι* is not elided. *Quom* is so regularly used by Plautus, *i.e.* after congratulations or self-felicitations, or the reverse, on a state of facts actually existing.

Ranae, 269.

XA. ὦ παῦε, παῦε, παραβαλοῦ τῷ κωπίῳ.
ἔκβαιν' ἀποδούς τὸν ναῦλον.

I suggest τῷ κρωπίῳ. κρώπιον was a rare word for a bill-hook. I suggest that it also meant a *boat-hook*, which is what is wanted here.

Ib. 465.

AI. ὦ βδελυρὲ κἀναίσχυντε καὶ τολμηρὲ σὺ
καὶ μιὰρὲ καὶ παμμίαρὲ καὶ μιαιώτατε
ὅς τὸν κύν' ἡμῶν ἐξελάσας τὸν Κέρβερον
ἀπῆξας ἄγχων ἀποδράς ᾗχου λαβών
ὃν ἐγὼ 'φύλαττον.

A line has, I think, fallen out here after the fourth verse, referring to Theseus. Æacus did not guard Cerberus. Hercules not only stole Cerberus, but took away with him Theseus, whom Æacus *was* guarding, to the upper regions.

Ib. 1298.

ΑΙΣΧΥΛΟΣ.

ἀλλ' οὖν ἐγὼ μὲν ἐς τὸ καλὸν ἐκ τοῦ καλοῦ
ἤνεγκον αὐθ' ἵνα μὴ τὸν αὐτὸν Φρυνίχῳ
λειμῶνα Μουσῶν ἱερὸν ὀφθείην δρέπων·
οὗτος δ' ἀπὸ πάντων μὲν φέρει πορνιδίων,
σκολίων Μελήτρου, Καρικῶν αὐλημάτων
θρήνων, χορείων.

No passage seems to have given Mr. Blaydes more

trouble than this, as his long and exhaustive note shows. The fourth verse has two blemishes : first, μέν has no place here, and is rightly obliged by Blaydes ; secondly, πορνιδίων is against the usual quantity of the word. I accept Mr. Blaydes's πορνειδίων, 'lupanaria.' There remains μέν. Now it seems to me that the true reading is μέλι, 'honey,' and that this is a corruption which has descended from uncial MSS., for MEN and MEAI were in uncials practically the same. The mention of the meadow, in the third line, naturally leads up to the simile of a bee (*cf.* Hippol. 77 : μέλισσα λειμῶν' ἡρινὸν διέρχεται), and this seems to me to be clearly pointed out by the use of ἀπὸ πάντων : *cf.* *Herc. Fur.*, 487.

πῶς ἂν ὥς ξουθόπτερος
μέλισσα συνενέγκοιμ' ἂν ἐκ πάντων γόους ;

and Isocr. *ad Dem. Fin.* : Τὴν μέλισσαν ὀρώμεν ἐφ' ἅπαντα μὲν τὰ βλαστήματα καθιζάνουσιν ἀφ' ἐκάστου δὲ τὰ χρήσιμα λαμβάνουσιν : 'This man gathers honey from every—brothel,' a strong παρὰ προσδοκίαν.

PLAUTUS—*Persae*, 94.

A. Collyrae facite ut madeant et coliphia,
Ne mihi incocta detis. *B.* Rem loquitur meram.

The hiatus after *mihi* is illegitimate. Perhaps we should read *incohata*, 'half-done.'

Ib. 358.

S. Meo modo istuc potius fiet quam tuo.
Fiat. Quae haec res sunt? *V.* Cogita hoc verbum, pater,
Erus si minatus est malum servo suo,
Tametsi id futurum non est, ubi captum est flagrum,
Dum tunicas ponit, quanta afficitur miseria.

Read in the second line: *Atat! Quae haec res sunt?*
The girl evidently begins to weep, exciting her father's indignation. 'Aha! What's all this?'

Persae, 651.

Virgo. Jam hoc tibi dico; actutum ecastor meus pater
ubi me sciet
Venivisse huc, aderit et me abs te redimet.

Certainly not *redimet*. The *leno* would like nothing better. Read *repetet*.

Rudens, 298.

Post id piscatum hamatilem et saxatilem adgredimur.

If *saxatilem* is co-ordinate with *hamatilem*, it should mean fishing with a certain implement. Hence, Ussing says it means fishing with hooks of stone, which is absurd. Perhaps *naxatilem*, 'with lobster-pots,' 'creels,' a common form of fishing in old times, may be right. *naxa* is considered by some as good a form as *nassa*. But I doubt whether *saxatilem* is co-ordinate with *hamatilem*, and whether the ordinary interpretation, 'fishing from rocks,' is not right.

Ib. 315.

Tortis superciliis contracta fronte fraudulentum.

A spondee in fourth foot. Read *coacta* [Densissima ruga *Cogitur* in frontem: Juv. x.]

Ib. 383.

A similar blemish to the last.

A. Sed duce me ad illam ubi est. B. I sane in Veneris
fanum huc intro.

Read *Palaestram* for *illam*, and strike out *Veneris*.

Rudens, 556.

A. Nempe puellae? B. Nempe molestus es. Vise si habet.

Add *ipse* after *vise*, not *intro*.

Ib. 1368.

Cedo quicum habeam iudicem,

. Ni dolo malo instipulatus sis nive etiam dum siem
Quinque et viginti annos natus.

The sense requires *sive* for *nive*.

Stichus, 538.

Apud nos eccillam festinat cum sorore uxor tua.

Festinatio was the part of the slaves, see 676: at any rate, it was not part of a guest's business to 'bustle about.' Now Panegyris had given orders to get ready a thanksgiving sacrifice for her husband's return (397), and had invited her sister. Hence, *perhaps*, we should read *festivat*; Gloss. Labb. *festivo*, ἱοπράζω.

Ib. 549.

Ego tibi meam filiam, bene quicum cubitares dedi.

Read *bone* = ὦ μέλε', 'my good fellow.'

Ib. 669.

Volo eluamus hodie peregrina omnia.

Relinque: Athenas nunc colamus: sequere me.

In the absence of anything tolerable, I suggest—

Nolo elluamus hodie. Peregrina omnia

Relinque. Athenas nunc colamus. Sequere me.

¹ Is this μέλε a relic of the root *mel*, which is found in *melior*?

helluor would, in Plautus, naturally be *helluo*. *helluemus* would be written *elluemus*, or *eluemus* corrupted to *eluamus*.¹ The sense would be: 'I vote we don't make beasts of ourselves. Away with all foreign fashions (perhaps Roman gluttony included). Neat Attic fare for us to-day!'

Truculentus, 746.

Unum aibas: tria dixi verba atque mendacia.

Sense and metre demand *atque adeo*, 'and three lies, what's more.'

Ib. 989.

Par pari respondet. Verum nunc saltem si amas.

Dan tu mihi de tuis deliciis sũ quicquid pausillulum?

Read *alterum* after *saltem*, and in the second line *suave quid* for *sũ quicquid*: 'Though you love some one else, yet keep a tiny little drop of sweetness for me.'

CICERO—*ad Fam.* III. 1. 1.

Idque me, quoniam tu ita vis, puto non invita Minerva esse facturum: quam quidem ego, si fote de tuis sumpsero, non solum Παλλάδα sed etiam Ἀπιδά nominabo.

Mr. Tyrrell apparently gives up the attempt to find where the joke lies here. May I suggest that Cicero may have perpetrated a pun somewhat worse, if possible, than those usual with him, and wrote ἄπαιδα, with a play on the name *Appius*? This would not be worse than Varro's play on *apes* and *Appius*.

¹ The MSS. of Catullus 29, 15, give *elluatus est* and *eluatus est*.

HORACE—*Sat.* I. 2 25.

Maltinus tunicis demissis ambulat: est qui
 Inguen ad obscenum subductis usque facetus:
 Pastillos Rufillus olet Gargonius hircum.

If *facetus* is sound, it must be joined with *Rufillus*, as Peerkamp has proposed. *Facetus*, besides 'funny,' meant, I know, 'smart,' 'clever,' 'elegant'; and there is nothing of this sort shown by wearing the tunic as here described. But again, *facetus* cannot be joined with *Rufillus* in a good sense; for Horace himself calls *Rufillus ineptus*, quoting this verse of his own, *Sat.* 4. I read:—

Maltinus tunicis demissis ambulat: est qui
 Inguen ad obscenum subductis usque VAGETUR.

I require a verb to follow *est qui*—a verb which will contrast with *ambulet*, as much as a negligé style of dress did with that of Maltinus. *Vagor* is this word; for *vagor* is used of 'strolling,' while *ambulo* is used of 'strutting.' Cf. *Epod.* 4, 5: *Licet superbus ambules pecunia, with Mart.* 9-32. 1: *Hanc volo quae facilis quae palliolata vagatur.* There is not much difference between *vagetur* and *facetus* in either uncials or cursives.

 JUVENAL, VIII. 237.

Hic novus Arpinas ignobilis et modo Romae
 Municipalis eques galeatum ponit ubique
 Praesidium attonitis et in omni . . . te laborat.

It is uncertain what word followed *omni* in P, the first three letters being erased. *Monte* is the usual reading;

¹ So Jahn. According to Buecheler, the whole word is erased in P.

parte has less authority. I suggest *in omnia mente laborat*, 'he plans to meet every emergency.' Cf. Cicero *ad Fam.* II. 8. 2: 'ad omnia quae providenda sunt in republica et animo et consilio paratum. Another suggestion might well be made—*in omni Marte*. *Monte* is certainly wrong, and came from *monte solebat*, six lines further on.

A. PALMER.

June 1, 1887.

CORRIGENDA

FOR MR. PALMER'S PAPER, 'MISCELLANEA CRITICA.'

I find that I have been anticipated in my emendation of *Helena*, 302 (σδρκ'), by Paley, and of *Helena*, 1590 (ἀρρλαρ), by W. G. Clark.

NOTE.

IN a note on the words *Χρηστομαθία γραμματική* in *HERMATHENA*, vol. v., p. 254, I raised a question as to the authorship of that treatise which I had not then the means of answering. Valesius (Henri de Valois) asserts, in a preface quoted by Gaisford in his 'Hephœstion,' that Alexander of Aphrodisias (flor. *circa*. A.D. 200) refers to the testimony of Proclus, in his 'Chrestomathia,' and thence draws the conclusion that it could not have been written by Proclus Diadochus. By the kind help of Mr. Garnett of the British Museum, I am now able to show that the statement of Valesius was inaccurate. He writes thus:—

'Quod vero Suidas *γραμματικῆς Χρηστομαθείας* libros eidem Proclo philosopho tribuit, in eo, mea quidem sententia, graviter labitur. Sunt enim tu libri alterius Procli longe antiquioris, ut didici ex Commentariis Alexandri Aphrodisiensis in Aristotelis Eleuchos. Hic enim non procul ab initio illius Commentarii utitur testimonio Athenoei Grammatici et Procli in Chrestomathia,' . . . &c.—(H. Valesii, lib. v., p. 168. Amstelodami: 1740).

Alexander, however, speaks of a totally different work of Proclus—an 'Enumeration of the Festivals':—

ὥσπερ Ἀθηναῖος ἐν τῇ δειπνοσοφιστῇ, καὶ Πρόκλος ἐν τῇ τῶν
ἐορτῶν ἀπαριθμῇσει εἰρήκυσι,

—Alex. Aphrodis: Edit. Ald. fol. 4, line 16; and see Translation, Venetiis: 1541. Brit. Mus. (519 k. 13).

My conjecture, therefore, as to the authorship of the hexameters, of which I presented fragments to the readers of *HERMATHENA*, has not been proved to be altogether groundless, as would have been the case if the statement of Valesius had been correct.

C. LIMERICK.

ON OGAM INSCRIPTIONS.

IN two previous articles,¹ I have endeavoured to put before the readers of HERMATHENA views which my studies have led me to form with respect to the Ogam character. In the first, I gave an account of the Bethluisnin itself, the forms, powers, and names of the characters, as they are presented to us in the Treatise on Ogams and the Uraicept, two very ancient Irish manuscript authorities; and I expressed the opinion that the Bethluisnin was a cipher founded on the Roman alphabet, and closely related to the Tree Runes. In the second, receiving important help from Professor O'Curry, I brought together all or nearly all the passages in our ancient Irish documents, in which I had found references to the use of the Ogam character, and I showed that our native authors unanimously agreed in regarding it as a cryptic mode of writing, intended to be understood only by the initiated. This assertion of mine as to the nature of the Ogam has been contradicted, but my authorities have not been impugned. And no contrary testimonies of the same kind have been adduced.

But I have stated that our conclusions as to the origin and use of the Ogam character must rest not only on the statements and reasonings of the writers who have treated of it, but chiefly upon the evidence of the numerous monuments which exhibit inscriptions in this character. To the discussion of this, the most interesting, and the most

¹ Vol. ii. p. 443, and vol. iii. p. 208.

difficult, part of the inquiry, I now offer a contribution, necessarily brief, but bringing into view two topics, the consideration of which will help towards the establishment of more general conclusions. I propose to notice, in the first instance, some inscriptions, which furnish proofs more or less complete that the persons who made them were acquainted with Latin. And I shall also offer readings and explanations of several inscriptions, presenting names which I can identify as those of persons of whom we have records in our most ancient and trustworthy manuscripts.

Some Ogams contain a Latin element, which could not be ignored except by those who felt that the admission of its presence would be fatal to their theories as to the nature and date of such inscriptions.

There is, for instance, in the townland of Kinard East¹, county of Kerry, in a regular cemetery, and near the ruins of a church, an Ogam monument exhibiting the name

MARIANI.

It is perfectly well preserved. Not a letter has been lost or injured. MARIANUS is the Latinized form of three Irish names—*Maelmuire*, *Maelbrighde*, and *Muiredach*. The first of these is presented to us in connection with an interesting event, the removal of the bodies of Brian Boromhe and his son to Armagh after the battle of Clontarf, A.D. 1014—

‘Maelmurius, sive Marianus, filius Eochadhi, comorbanus S. Patricii, et alii multi seniores cum sacris reliquiis profecti sunt ad Monasterium Surdense S. Columbæ (Swords); et inde Ardmacham asportarunt corpus Briani regis Hiberniæ, corpus

¹ Ordnance Survey, sheet 53.

Murchadi ejus filij, caput Conangi, et caput Nothlani. Maelmurius vero et clerus assistens cum magno honore et solemnitate custodiebant hæc corpora, donec ea postea Ardmachæ honorifice sepeliverunt.¹

Maelmuire O'Gormain, Abbot of Louth, author of a metrical 'Martyrology,' written about A.D. 1167, has been better known as Marianus Gormanus. His baptismal name Maelmuire, meaning 'the tonsured servant of Mary,' was supposed to be correctly represented by Marianus. But Marianus was frequently, and perhaps more frequently, used to represent the Irish name Maelbrighde. Of this use, a single example will suffice. Maelbrighde was the Irish name of the chronicler Marianus Scotus (+ *circ.* A.D. 1083), who was *inclusus* in the Monastery of S. Martin, at Mayence.² As S. Bridget was the Mary of the Irish,³ the same Latinized form answered for both names. They seem to have been commonly in use in Ireland between the ninth and eleventh centuries. That Marianus was also the Latinized form of Muiredach is proved by an entry made in his own handwriting by another Marianus Scotus, who was Abbot of Ratisbon.⁴

On this monument is inscribed a cross of a peculiar form—a Greek cross, inclosed in a square, the sides of which are parallel to its members. The whole square is thus divided into four smaller squares, of which the two upper ones have crosslets similarly inclosed in them. But examples of crosses in which the same principle of design has been developed are to be found elsewhere. We have several instances in Petrie's 'Christian Inscriptions in the Irish Language'; and Mr. Wakeman's Memoir on Inishmurray supplies others.⁵

¹ Colgan, *Trias*, p. 298.

² Colgan, *Trias*, pp. 606 and 622.

³ Zeuss, *Gram. Celt.*, pp. xvii. and xxviii.

⁴ Reeves, *Proc. R. I. A.*, vol. vii. p. 290.

⁵ *Jour. R. H. A. A. I.*, No. 67.

Mr. Brash thinks that this was not a cross at all, but a map of the territory owned by the person commemorated; and Sir Samuel Ferguson calls it an alphabetical diagram, finding in it what with some straining may be regarded as the Ogam characters standing for the letters in MARIANI.

There is a smaller cross on this stone, which Mr. Brash regards as recent. The supposition that any cross on an Ogam monument was contemporaneous with the inscription was inconsistent with the views which he held. He maintained, that 'facts dispose of the Christian uses of the Ogam; in truth,' he says, 'I have been much surprised that in the early days of Christianity in Ireland it does not appear to have been made use of: I have always been prepared for meeting with some Christian memorial inscribed in that character, but none such has hitherto turned up.'¹

As might be expected, Mr. Brash has endeavoured to evade the obvious consequences which would have resulted had he assented to my interpretation of this inscription. Accepting the letters, which are indubitable, he divides them into two words—MA RIANI, which he translates as '*the field plain*' or '*land of Rian*'; and he represents the cross as being a 'regular map or ground plot, showing the subdivisions of some tract of land.'

It may seem a waste of time to criticise an explanation so absurd; but it may be done in a few lines. MA might indeed, in Welsh, have had the meaning of *Campus* or *Locus*, though not, I suspect, in very old Welsh;² but it

¹ *Ogam Inscribed Monuments of the Gaedhil*—Brash, p. 113.

² In compound Welsh words the final *ma* is regarded by Zeuss as signifying *locus*, and he treats the word *maes* (= *mages*) as signifying *campus*. That

the Welsh word had originally a G in its formation, appears to be demonstrated by passages referred to by Mr. Skene, who compares *Mocetauc* in the Chronicle of 977, *Magdawc* in the *Brut y Saeson*, and *Maesydawc* in the *Brut*

could not have represented the Irish *magh* or the Latinized *magus* (found in Noviomagus, Rotomagus, Juliomagus, &c.), which could not have dispensed with the G at any time when the Ogam character was in use. But further, Mr. Brash, regarding the monument as a terminus, translates MA as meaning a plain, field, or piece of land. *Magh* really means a plain, and was translated by the Latin *campus* or *planities*.

And now as to RIANI. It is true that Ryan was and is a common name in Ireland. But the names of the predecessors of the modern Ryans and O'Ryans, lords of Idrone in the county of Carlow, were spelt with a G. Only in a modern MS. could RIAIN stand for RIAGAIN. The reader will probably agree with me in thinking that MARIANI is the genitive of MARIANVS, having in it the elements both of Latinity and Christianity unmistakably presented, even if they were not attested by the accompanying sign of the Cross.

Let us now consider an inscription found at Burntfort, near Mallow, in the county of Cork.¹ It is well preserved, and presents the name SAGITTARI. We may be in doubt whether this was a proper name, or a common noun meaning an archer. But it is not easy to shut our eyes to the fact that it is Latin. It may have been a proper name; for we learn from Gregory of Tours that it was borne by a bishop who lived in the sixth century. And it would be conceivable that he came to Ireland as an outlaw, or a penitent after the commission of many and great crimes, if the historian had not told us that he died by a

y *Tywyssogion*, specified as the place where, in both the Welsh and Irish Annals, a great battle is recorded to have been fought. The place, he says, was, no doubt, Mugdock, in the

parish of Strathblane, Stirlingshire. In old charters it is spelt *Magadavac*.—Skene, *Ancient Books of Wales*, vol. i. pp. 104 and 180.

¹ Ordnance Survey, sheet 42.

violent death in France.¹ SAGITTARIUS, if it be a proper name, is a rare one. If it be the Latinized form of a Celtic name, I have not ascertained what that name could have been. But there were archers in Ireland at least in the middle ages, if not in the remote times in which the advocates of the Pagan theory of Ogam writing would place the Sagittarius named in this inscription.

Professor O'Curry, in his *Lectures on the Manners and Customs of the Ancient Irish*, states that there is no allusion whatever in our more ancient historical and romantic Tracts to bows and arrows, and adds, what he says is more remarkable and more important [if, indeed, it could be established], that there are no specimens of arrow-heads found among the other stone and metal weapons which have come down from the ancient times, either in Ireland or in any of the neighbouring countries.

He seems to have been led to this conclusion by his belief that as there were no ancient *barbed* arrow-heads found in Ireland, bows and arrows were not in use there. May there not have been such arrow-heads as were used by bowmen in other countries? O'Curry himself, quoting from MS. authorities (Book of Ballymote, fol. 776; and T.C.D., H. 2. 16), notices a reference to the use of the bow and arrow in a narrative of the death of Niall of the Nine Hostages (A.D. 405).

Dr. Sullivan is doubtful about O'Curry's conclusions, thinking that the *Saget-bolc* was a bow (as *Saget* is obviously connected with *Sagitta*), and that the word *Diu-barcu*, met with in some of the oldest tales and in the best MSS., was the general name for darts of all kinds, but especially for arrows shot from the bow.²

¹ Gregory of Tours, lib. v. c. 20, and *Customs of the Ancient Irish*, vol. ii. p. 273, and vol. i. p. cccclii-v.

² O'Curry's *Lectures on the Manners*

As the Irish are alleged by their historians to be Scythians by race, they ought to have been archers. We are told that Scythes, though the youngest son of Hercules, was appointed to rule in his father's place, because he knew how to draw the bow.

O'Donovan, in his Supplement to O'Reilly's *Dictionary*, gives to the word *seirseanac* an explanation different from that furnished by O'Reilly. He says:—

'Seirseanach, an archer, a bowman, *sagittarius*.

"A.D. 1196.—Mathghamhain mac Concobhair Maonmaighe do marbhadh le sersenach (i. Congobann) do muintir Domhnaill Ui Mhórdha. Domhnaill O'Mordha fein do thuitim is in uair cedna do laimh Cathail Carraig."—*Annals of Kilronan*.

"A.D. 1197.—Mathghamhain mac Conchubhair Maenmaighi occisus ab aliquo sagittario de familia Domhnaill Ui Mhórdha et in eadem hora Domhnaill Ua Morda cecidit de manu Cathail Carraig."—*Annals of Boyle*.'

In the middle ages, soldiers employed in Ireland were entitled by custom to what was called *bonaght*, an allowance of money, food, and entertainment, in lieu of regular pay. Their exactions, under the pretence of these rights becoming general and oppressive, led to so much misery and crime, that the name of *Kern* came to be used as a term of reproach, though it appears to have originally meant only a soldier or a company of soldiers.¹

The *Sagittarius*, being a foot-soldier and light-armed, must have been a Kern.

¹ 'Kern' is derived from *Ceithern*, which Cormac MacCullinan, King and Bishop († A.D. 908), explains as follows:—' *Ceithern*, a band of soldiers; unde dicitur *ceithernach*, one of a band; *ceithern*, i.e. *cath*, battle; and *horn*, i.e. *orn*, to destroy (*orcain*). ' O'Donovan

connects the elements of the word so as to make it mean 'to plunder, wound, and burn.' The word came to be limited to light-armed troops, as distinct from Galloglasses, who were heavy-armed.

Scholars belonging to the school of General Vallancey have dealt with this inscription in a manner similar to that in which the Mariani legend was treated. They divide it into two words—

SAGI TTARI,

and explain it as [LAPIS] SAPIENTIS DARI.

Now, this SAGI is a figment. Etymologists who follow the guidance of Vallancey present to us the word *Sag*, or *Sagi*, as an old Celtic word, equivalent to the more modern *Sai*, *Sui*, or *Saori*, and profess to find it in the word *Sagart* (which is really = *Sacerd* = *Sacerd-os*). They are unable to prove the existence of this conjectural *Sag* form of *Sai* with a *g* in it by any reference to inscribed monuments, or to such MSS. as the Books of Leinster and Ballymote, or the Lebor na h-Uidhre, not to mention the Book of Armagh, or the Book of Hymns. They also take no account of the fact, that the title *Sai* applied to a learned man follows, instead of preceding, the proper name.

As for DARI, it cannot be made out of TTARI. *Daire* was, no doubt, an old Irish name, and *tt* was made to stand for *d* in comparatively modern MSS.; sometimes (see O'Donovan's *Grammar*, p. 64), when an *initial t* was eclipsed, *tt* was written, contrary to rule, for *dt*; and *tt* was not unfrequently substituted for *d* in the middle or at the end of words, in accordance with a pedantic fashion adopted by scribes. But no authority for such a mode of spelling can be found in the ancient MSS. just mentioned, or in Ogam or other inscriptions.

In this case I trust my readers will prefer my good Latin genitive *Sagittari* to the bad Irish *Sagi ttari*.

The next instance to which I refer in support of my assertion, that persons using the Ogam character possessed a knowledge of the Latin language, is furnished

by a monument, one of three which were found by Col. Lane Fox at Roovesmore, parish of Aglish, in the county of Cork,¹ and deposited by him in the British Museum. It presents two inscriptions, of which I have occasion to analyse only one at present.

Sir Samuel Ferguson, reading it from the top downwards, trying both from left to right, and from right to left, has elicited two transliterations, of which neither seems to have commended itself to his judgment. Writing P for the X symbol, which could not well represent the diphthong, as it comes between two vowels, he gets

ELURI AFI APERAS,

OR

EDURIATI APERAC.

It is hard to say what might not be made out of either of these by an effort of ingenuity. But Sir Samuel Ferguson has not yielded to the temptation to exercise it. I can only say that they are unlike any Ogam inscriptions I have ever seen.

Mr. Brash has taken a different course, and on the whole a better one, in so far as he reads the inscription from the bottom upwards, and in the ordinary way; that is, from left to right. Thus he obtains

CARE[X]AITAUORUDEO.

On this he remarks, that the X symbol, usually given for the diphthong EA, stands here in such a combination with vowels both before and after it, as renders it of no power; and he concludes by saying that 'the damaged state of this legend, and the absence of any word or combination of characters familiar to us, prevents any reasonable attempt at a rendering; at least, I cannot see my way to it; in all probability it bears some reference to the

¹ Ordnance Survey, sheet 72. *Archaeological Journal*, vol. xxiv. p. 123.

persons named in the inscription on [the opposite angle.' In fact, he gives up the attempt to explain it. But he had come very near the required solution. If he had put P in the place of the X symbol, a use of it to which he appears to have assented in two instances;¹ and had he avoided the abnormal resolution of I into UO, and indicated the doubtfulness of the final vowel or vowels, he would have presented to us what, I feel sure, is the true reading—

CARE PAITAIR UDI,

misspelt Latin, but Latin all the while, for

CARE PATER AUDI.

What I characterise as misspellings scarcely deserve so hard a name. They are insignificant compared with what we meet in Latin words occurring in the MSS. of Cormac's Glossary and the Brehon Laws. PAITAIR is very little removed from the Irish ATHAIR; and the interchange of AU and U is natural, and not unfrequent. Take, for instance, the spelling of *udhacht* or *audhacht*, *urtach* or *aurtach*. O'Donovan, in his Appendix to O'Reilly, observes, generally, that *au* is found in the most ancient MSS. for *ú* long, as *aurdalta* for *úrdalta*, *aurdam* for *úrdam*. The *audi* or *audii*, in the invocations in the Stowe missal, supports my reading of the last word in the inscription. Its first word reminds us of the CARI, carved in old Irish characters on the wall of S. Benen's Church in Aran Mor.

On another edge of this same stone is an inscription, the discussion of which would lead me too far from my present object. It is enough to notice that the first part of it, ANAFLAMATTIAS, has a very un-Celtic aspect. Even Mr. Brash, who was ready to note the faintest resemblance of names, has adduced no Celtic name including the element *Flam*. It seems not improbable that *Anafla-*

¹ *Monuments of the Gaedhil*, pp. 59 and 189.

mattias may be the Latinized form of an Irish name, having the signification of burning or flaming, like *Latsre*.

Archdeacon Rowan was, I believe, the first person to direct the attention of antiquaries to the remarkable monument at Camp.¹ It bears an Ogam inscription which exercised the ingenuity of decipherers for a considerable time, and with results which were not a little entertaining, until the writer showed that its meaning would have been obvious if instead of reading it from left to right, which is the usual method, they had read it backwards, that is, from right to left. It is not, however, with the Ogam legend that we have to do at present. Under it Archdeacon Rowan noticed 'some cuttings, which,' he said, 'looked like defaced or imperfectly formed characters'; but it appeared to him 'impossible to determine for what they were intended.' Sir Samuel Ferguson, examining it more carefully, observed that the accompanying inscription was in Roman letters. He had at first, as well as I remember, expressed his opinion that they were to be read as *Feci* or *Fecit* followed by the name *Cununi*. But in his *Rhind Lectures* he has adopted a different reading. As I do not feel sure that I quite understand his meaning, I quote his words:—'The accompanying inscription, in Roman mixed minuscules, seems to spell *Fecununi*. There is a vertical dash over what has been taken for the *c*, which may affect the reading. One cannot help suspecting that it is a *t* inverted, and that the reading is—

Fect Cununi,

"the tomb of Cunun," recalling the *conuneatt* of the main legend.²

His first conjecture was, I think, the more probable, namely, that the monument was bilingual. As two kinds

¹ Ordnance Survey of Kerry, sheet 36.

² *Rhind Lectures*, pp. 49, 50.

of character were employed, it seems natural to suppose that the Roman letter was used in the Latin inscription, and the Ogam in the Celtic one. But, however we may read it, the inscription stands there in Roman letters, and to all appearance contemporaneous with the Ogam.

In one of the Drumloghan Ogams,¹ CU FECI, in Ogam characters, follows an inscription in which the proper name CUNALEGEA appears in full upon another arris of the same stone.

So again, an Ogam in a rath-cave in the townland of Aghaliskey, parish of Kilmalooda, county Cork,² which reads as CUNAGUSOS MAQI MUCOI F, ends with an F, which appears to stand for *fecit*.

Another of the Ogams in the Drumloghan cave already mentioned begins with MANU, followed by the genitive case of a proper name. Mr. Brash, unable to recognize Latin here, and making a feeble attempt to treat this as a proper name, explains the *magu* which follows it as = *magi* ! It is really a part of the compound proper name, MAGUNOCATI, of which more hereafter.

Sir S. Ferguson, in his *Rhind Lectures*, notices an Ogam on a stone near a well in the neighbourhood of Stradbally. I have seen it, and found reason to join and divide the letters differently. I read the middle portion as AGRACOLI, bad spelling for Agricola. He reads AFINIA, GRACOLINI, recognizing a classical taste and a non-Celtic sound in the words.

The Killeen Cormaic monument gives us an inscription in Roman letters, to be read no doubt in connexion with

¹ Brash—*Ogam Monuments*, p. 275.

² Ordnance Survey, sheet 122.

the Ogam respecting which so much difference of opinion has arisen—

IV VERE DRUIDES.

‘Four veritable Druids.’

The *Vere* may have an absolute meaning here, or only a qualified one, as it has in Virgil (*Æn.* ix. 617) when applied to effeminate men—

‘O vere Phrygiae, neque enim Phryges.’

In the table at the end of the Martyrology of Donegal, p. 418, we find the name *Fionnghain* [*mac Aircinnigh*] ó *Diamair*, followed by the note [vide an sit Fingar: vere solitarius]. Dr. Todd thought that the words *vere solitarius* were intended as a translation of the name Fingar. The *vere* was intended in this case to have its full force.

The Latin inscription has also been read as

IVVENE DRVIDES,

and taken to signify ‘the stone of the Druid youths,’ or ‘the stone of Juvan the Druid’. I confess that I prefer the good Latin of the first-named reading to the bad Latin of the latter one, with its ambiguous interpretation. For the present, however, I have only to notice the appearance of the Roman letters and the Ogam characters in the same monument.¹

There are cases where F, being separated from what precedes and follows, stands for *Fili*, as it commonly does in Latin inscriptions. For this we were prepared by the series of Sigla annexed to the Ogam tract. *Maicc* is there given as explanatory of the Ogam F. I am not aware that F is used with this meaning in any of the ancient Irish or Welsh sepulchral inscriptions written in Roman letters. But the monument known as the Cat

¹ *Rhind Lectures*, pp. 70, 74.

Stone furnishes an example showing that the abbreviation was used in sepulchral inscriptions in times and places not remote from those which we are now considering.¹

A remarkable Ogam, in which F stands for *Fili*, is preserved in the Royal Cork Institution. It presents the name

COLOMAGNI

distinctly cut, and in smaller characters, almost hidden in a cleft in the stone, what I read as

F ADALTRI.

The F is separated by a considerable space from the A which follows it, and cannot be taken as part of the name *Colomagni*, which is simply the genitive of the Latinized form of Colman. It is to be observed that these forms of proper names ending in *-agnus* are not peculiarly Ogam. We meet with this very name, Colomagnus, in a Latin life of S. Livinus, written about the end of the tenth century.

The place where this stone was found is called Glenna-willen, the Glen of the Mill; and among Irish saints there was one called Colman of the Mill. This may be a merely accidental coincidence; for the Book of Leinster enumerates, in a list of homonymous saints, above 200 bearing the name of Colman; and the element *muillend* enters into a great many topographical names. But I have hopes of being able to obtain additional information, which will be decisive as proving or disproving the identity of the Colman of the inscription with the Colman of the Mill.

The Brehon Laws tell us that the Mac Adaltraigi held an inferior position, as regarded his temporal rights, to that of the son of a first legally-married wife. Here we

¹ Hübner, *Inscriptiones Ch. Brit.*, p. 76.

have an instance of the Ogam being used, as M'Curtin said it was, to record something disparaging to the person whose name was inscribed on the monument.

I hope to be able shortly to adduce an example in which this use of the initial F enables us to explain one of the most enigmatical of our Ogams, an adequate discussion of which would be inadmissible here.

The first monument to which I would refer, as setting before us the name of a person who can be positively identified, the date of the inscription therefore admitting of an accurate determination, was found at Ballynasteenig, near Dingle.¹ Though the stone has been broken in two, the inscription has not suffered; it is perfectly legible, and reads as follows:—

MOINENA MAQI OLACON.

There is no difficulty in identifying Moinenn. He was the uncle of the great S. Brendan of Clonfert, the navigator, the Archimandrite of three thousand monks, and whose name still survives in the designation of a mountain which rises from the sea to a height of more than three thousand feet, only a few miles from the spot where the stone was found. Brendan was the son of Findloga, and is generally styled Mac-Ua-Alti. Olchu, genitive Olcon, was his grandfather, and appears in that relation to him in the pedigrees given in the Book of Leinster and the Leabhar Breac. Brendan himself seems to have remained a presbyter. Moinenn was attached by him as bishop to his monastery at Clonfert, and is named as Bishop of Clonfert in the Felire and in the Martyrologies, being commemorated on March 1st. In the list of

¹ Ordnance Survey of Kerry, sheet 43.

bishops given in the Book of Leinster there is but one Moinenn, and but one among the bishops enumerated in the Stowe Missal as invoked in the prayer *Libera nos*.¹

Moinenn died A.D. 572, about six years before the death of S. Brendan.

Mr. Brash, objecting to my identification of the names of Moinenn and Olchu, observes that 'the tendency to identify local historic or traditionary names with those found on Ogam monuments has been a serious impediment to their study, and has led to a large amount of elaborate and useless criticism.' I cannot admit that the method of treating questions relating to Ogam inscriptions which I have pursued has produced the injurious effects upon this branch of study which Mr. Brash imputes to it. I acknowledge that I have endeavoured to do the very thing which he complains of, so as to support the conclusions to which palæography and philology lead us by the evidences of history and topography.

The next monument to which I shall refer, as enabling us to identify a person named in an Ogam inscription, was found in the disused burial-ground of Aglish, in the parish of Minard, Co. Kerry,² within a short distance of the monument last noticed. It was evidently a headstone, having a cross within a circle, such as is observed on Christian monuments in Ireland, supposed to belong to the fifth or sixth century. Under the cross two small Swastikas have been carved. There is no evidence to show that this symbol was ever used in Ireland in pre-Christian times, though sun-worship may have existed

¹ Mention is made in the Martyrology of Donegal of a second bishop of the name commemorated on the 16th of September. Colgan, *AA. SS.*, gives a life of the Bishop of Clonfert

at the 1st of March. For the adverse criticism of Lanigan, see his *Ecclesiastical History of Ireland*, vol. i., p. 437, and vol. ii., p. 36.

² Ordnance Survey, sheet 54.

there, and the Swastika was, doubtless, a symbol of the sun-god amongst many pagan nations. Instances of its use in this country are rare, and point to a remote period in the history of Irish Christianity.

Little doubt can be entertained as to the mode of reading this inscription; the characters are distinct, and give the legend

MAQI MAQA APILOGDO.

Sir Samuel Ferguson was at one time of opinion that the name was to be read APILOSTO, and regarded as an anagram of APOSTOLI. To that opinion he did not adhere. The four strokes which he took to represent the character which stands for Z, or ST, form two groups, the first of which is certainly G, and the second almost as certainly D.

With respect to this name APILOGDO, I have to remark, firstly, that Irish scribes frequently made *p* to stand for *bh*; it was then pronounced with the sound of the English *v*; and, secondly, that the Irish *dh* was often represented in proper names by the same sound. These points being established, it appears evident that the name is the Ogam equivalent of AEDHLOGDH, the genitive case of a well-known proper name.

We possess materials to enable us to determine who this person was. Chronological arguments show with something like certainty that a chieftain named Maeltuile, son of Aedhloga, appearing in the pedigrees preserved in the Book of Leinster and the Leabhar Breac, was identical with a person of that name, of whom mention is made in the life of S. Mochuda (+ A.D. 636). This chieftain, who was Lord of Kerry, Dux regionis Kiarraighe, lived near the mouth of the River Mang, close to the place where the Ogam monument was found bearing the name of Aedhloga. As it is natural to assume that his father lived in the

same place, it is most probable that the Aedhloga whose name appears on the Ogam monument is the Aedhloga named in the pedigrees, a chieftain who lived in the sixth century. A more complete demonstration could hardly be expected in a case of this nature.¹

If my explanation is correct, the inscription supports the proposition which I have always maintained, that the Ogam names were not, in general, those by which the persons commemorated were commonly known, but that, as the character was a secret one, so the names themselves were disguised, sometimes by tricks of spelling, sometimes by other devices. Will any philologist seriously contend that, at the time when this monument was inscribed, that is to say, about the middle of the seventh century, the ordinary mode of writing the name Aedhloga was Apilogdo?

The monument of which I am now about to speak was found not far from Ballynasteenig, on the strand called Trabeg, in the townland of Emlagh East and parish of Dingle.² It has a special interest, as having been in all probability the first of the Ogam stones which attracted the notice of an antiquary; it was visited by the celebrated Edward Lhuyd, in the course of his tour in Ireland between the years 1702 and 1707. This inscription does not stand in the category of absolute determination of person and time, but makes a very near approximation to it.

The stone bears a Latin Cross, and the legend

BRUSCCOS MAQQI CALIACI.

There is one Bruscus, and one only, spoken of in the Irish Ecclesiastical Records. Tirechan, in his 'Annotations' in the Book of Armagh, mentions a Broskus as a presbyter

¹ *Transactions R. I. A.*, vol. xxvii.,
part 2.

² Ordnance Survey of Kerry, sheet
53.

ordained by St. Patrick, who is further said to have founded a church for him in Magh Rein, the southern part of Leitrim. The name has a foreign appearance, and this presbyter was probably one of those who accompanied St. Patrick from Gaul. It is also found on a stone built into the tower of a church in Lincolnshire, bearing the inscription: DIS MANIBVS NOMINI SACRI BRVSCI FILI CIVIS SENONI ET CARISSVMÆ CONIVGIS EIVS ET QVINTI F.—See Horsley's *Britannia Romana*, p. 319.

I had originally supposed that *Caliaci* was the genitive case of the proper name *Ceallach*. I am now more inclined to believe that *Maqqi Caliaci* means *filii nonnæ*.

In the year 1868, I visited a so-called *giant's grave* in a killeen or disused burial-ground, a few miles from Cahirciveen.¹ At the head of what looked like a long grave there stood a tall, slender, and somewhat pointed stone, bearing an Ogam inscription, and a rudely-incised Greek cross; at the foot was a much smaller stone with an elaborate cross, and a dove engraved upon it in a very peculiar manner.

I regret to say that this monument has been removed to a garden belonging to an institution in the town of Cahirciveen. As the sepulchral monument of a Christian, it stood in its right place in an ancient graveyard, where it does not seem to have been in danger of injury; moreover, it had interesting local associations of a later date. The old people of the neighbourhood told me that they had often seen O'Connell leaning against the headstone, while his pack of Kerry beagles hunted the adjoining valley.

The Ogam inscription reads as follows:—

ANM MOELEAGOEMIR ADMACI FEACIMEAN.

¹ Ordnance Survey of Kerry, sheet 80.

This is, as far as I know, the only instance in Ireland of the use of the character which denotes the diphthongs beginning with the letter O.

Of the formula *ann* I have spoken already. There is a considerable interval between it and the name which follows.

Moeleagoemir is a remarkable name, essentially ecclesiastical. It means the 'tonsured servant of S. Aedhamar or Eadhamar' (Latin, Audomara), a name which is to be found in the Martyrologies. Colgan (*AA. SS.*, p. 598), quoting from the *Sanctilogium Genealogicum*, in an appendix to the Life of S. Mochoemoc, gives the pedigree of S. Eadhamar. They were each of them fifth in descent from a common ancestor Carith, in the line of Conmac, son of Fergus MacRoigh. We are told (Colgan, *T. T.*, p. 204), that this Carith, who was a Druid, was one of the three persons who braved the wrath of King Laoghaire at Tara, in order to pay honour to S. Patrick and his followers; and further, that the saint prophesied that many bishops, prelates, and illustrious men would be numbered amongst his descendants.¹

Mochoemoc, Abbot of Liathmore, is said to have lived to the age of 114. As he died in 655 A.D., this agrees very fairly with the statement that he was fifth in descent from a contemporary of S. Patrick.

There is a mention of S. Finnbarr, of Cille hAdamair, (*Leabhar Breac*, p. 19, col. 4.)

Eadhamar's day, according to the Martyrologies, was the 18th of January. She is described in the Martyrology of Tallaght as *Ædamair ingen Æda for loc Erni* (Book of Leinster, p. 356, col. 3).

¹ It is worthy of notice that in a genealogy of a branch of the Conmaicne-Cuile-Toladh, given in the Book of Leinster, p. 322, fol. 2, the name of

this Carith appears with the following note appended to it:—It was he who made obeisance (*ro slecht, genuflexit*) to Patrick at Tara.

Supposing that she flourished at the beginning of the seventh century, we may regard the inscription as dating from about 650 A.D.

The next word, ADMACI, is perhaps another formula added to our small Ogam vocabulary. It may be recognized in different forms, as *otmacui* or *atlmacui*, on two of the stones in the Cork institution, and as *eattmacui* on the famous Camp Stone. I take this *ot* or *att*, *ath* or *aith*, to be a prefix like the English *mis*, indicating something false or wrong; for instance, *attaoiseach* means a deposed chieftain; *aithchleireach*, a degraded cleric (*Ann. of Four Masters*, ad ann. 1093); *aithcreideamh*, apostasy or misbelief; *aithrioghadh*, deposition; *aithghein* (= Corbmac., Martyrol. of Donegal, p. 361), misbegotten.

If this view of the meaning of the prefix is correct, the *atlmac* will mean *misbegotten*.

I am not able positively to identify the name *Feachimean*. The substantive *Feicheam* meets us repeatedly in the Brehon Laws, meaning one of the parties to a lawsuit.

From the shape of the stone, it appears nearly certain that the part bearing the inscription was intended to have been buried in the earth. This falls in with the notion that the inscription intimated something which was not to the credit of the person to whom the stone was a memorial.

I shall now notice a monument standing in the burial-ground at Aghabulloge, near Macroom,¹ which has always been known and held in veneration as St. Olan's Stone. Mr. Brash pronounced that this inscription, so far as it is legible, has no reference to the saint. It must be confessed that it was not easy to discover the clue by which we are led to an opposite judgment.

¹ Ordnance Survey, Co. Cork, sheet 61.

The name Olan is not to be found in that form in any ancient list of Irish saints. The correct spelling seems to have been Eolang or Eulang. A saint of this name, called also Eulogius, is recorded as having been preceptor to St. Bairre (Finnbarr) of Cork. Eolang, whose name occurs in the Martyrology of Donegal, at September 5th, is there said to have lived at Achadhbo-Cainnigh (Aghaboe, a townland and parish in the barony of Upper Ossory, Queen's County). Mr. Hennessy, however, has drawn our attention to passages in the Book of Leinster (p. 353, col. 1, line 26), and the Leabhar Breac (p. 21, col. 4, line 19), wherein he is stated to have lived at the very place, Aghabulloge, where the stone now stands. From the life of St. Finnbarr we gather that Eolang was the preceptor of that saint, and that he was one of a company of twelve persons who went with him on a pilgrimage to Rome. Even if we disbelieve the story that he was a hearer of St. Gregory the Great, it is plain, from his being the instructor of St. Finnbarr, that he must have been a man of learning, and one who held a high place in a brotherhood of distinguished ecclesiastics.

That Eolang, the preceptor of St. Finnbarr, was also known by the name of Maccorbius, we infer from the words of St. Finnbarr's biographer: '*Legitur quod Sanctus Maccorbius, Sancti Gregorii olim auditor, fuerit S. Barri institutor.*'

We may, therefore, assert that the monument known as St. Olan's Stone was the monument of Maccorbius, the teacher of St. Finnbarr. And this is in accordance with the Ogam inscription upon it, which I read thus:—

ANM CORRPMAQ SUIDD.M[A]PTT.

After the Q there appear three distinct strokes, with a fourth faint one, where the stone appears to have been injured by abrasion. There is exactly room for the fourth

stroke of an S between the third stroke and the first stroke of the U.

Owing to the injuries which the stone has received, the latter part of the inscription is so uncertain that it would not be consistent with my present purpose to discuss it.

When first I recognized the formula ANM with which this and several other Ogam inscriptions begin, I expressed my belief that it stood for the word *anim* (*anima*). A prayer for the soul of the dead in the form *orait ar anmain* was the commencement of many of the sepulchral inscriptions contained in Petrie's collection, and on that account this explanation may be regarded as more probable than any other. But as ancient Irish writers often speak of a man's *Ogam name* being inscribed on his monument, the formula ANM may possibly stand for *ainm* (*nomen*). Each legend commencing thus would in that case mean the (Ogam) name of the person commemorated. In another part, however, of this Paper (p. 265), will be found an inscription where the name following ANM seems to be given without any attempt at cryptic spelling.

The next part of the inscription is CORRPMAG, which I take to be equivalent to *Maccorbii*. Instances of such a transposition are occasionally met with. This is followed by SUIDD, which I believe to be the genitive case of SUI (*sapiens*), with the final letter aspirated by duplication. The legend to this point would then have the interpretation—

Anima (or Nomen) Maccorbii Sapientis.

St. Finnbarr died about A.D. 623. The death of his preceptor, who was probably his senior, may therefore be placed at about A.D. 600, and this, no doubt, is the date of the inscription.

It may be asked, why was the name of this distinguished ecclesiastic written in a cryptic character? The

answer can only be conjectural. We know almost nothing of his life and character. There may have been some stain upon his conduct, and his pilgrimage, as was the case with much more distinguished saints, such as St. Columbkille and St. Brendan, may have been intended as a penalty for sins or crimes brought about by his acts or influence. Or again, there may have been some blot upon his origin, and this may be alluded to in the name Maccorb or Corbmac. The celebrated king and bishop who bore that name tells us in his Glossary that it was properly spelt with a *b*, and meant *the son of a chariot*; that is to say, a person born in a chariot.¹ The king's derivations were not unfrequently incorrect; and in this particular case we may imagine that he was disposed to give a favourable rather than an unfavourable interpretation to his own name. I cannot help suspecting that the other mode of spelling, viz., with a *p*, suggested the true etymology with a reference to sin. The name Cormac is said to have been equivalent to Aithgen [Martyrology of Donegal, p. 361]; and I can adduce passages in which the idea of something abominable or wicked is connected with the name Corbmac or Coirpthi.

In a tale introduced in the *Miscellany* of the Celtic Society, edited by O'Donovan, p. 79, we meet with the following: 'Lugaid Corb shall be thy name,' said she, 'for corrupt (*coirpthi*) is the thing that thou hast eaten.' So again, in his edition of the *Book of Rights*, O'Donovan, after quoting a passage from Ware's *Annals*: 'Anno 1407, a certain false fellow, an *Irishman* named MacAdam MacGilmori, that had caused forty churches to be destroyed, who was never baptized, and therefore he was called Corbi (*coirphti*, wicked), took *Patrick Savadge* pri-

¹ It seems deserving of notice, that *carpait*, 'chariot-daughter,' in the an illegitimate daughter is called *ingen* Brehon Laws (vol. iv. pp. 16 17).

soner, and received for his ransom two thousand marks, and afterwards slew him, together with his brother Richard,' adds the following :—

'It is difficult to say where the good and honest Ware got this passage; but it is quite evident that *Corbi* does not mean unbaptized, and that Savadge had not so much money as two thousand marks in the world.'

If there is one Ogam monument which more than any other presents the appearance of being pre-Christian, it is the one of which I am now about to speak. It was seen standing about fifty years ago within a stone circle on the side of a hill, in the townland of Derrygarrane, parish of Templenoe.¹ Having been undermined by treasure-seekers, it has been prostrated, and the inscription, which had been well preserved, has been partly defaced. There is no cross upon it, and antiquaries who have examined it have not hesitated to assert its Druidical character. Fortunately, I am able to describe it as it existed in the year 1851, and have in my possession a carefully-made heel-ball rubbing, showing how the inscription appeared when it was perfect. It read as follows :—

ANM CRUNAN MAQ LUQIN.

The transliterations given by Mr. Windele and Mr. Brash were inaccurate. They improperly substituted SM for the final N. On this point no possible doubt could arise.

I now proceed to identify the persons who bore these names, to determine the time at which they lived, and to show that they were Christians. The Book of Leinster and the Leabhar Breac furnish the materials of proof. Amongst the genealogies of the tribes belonging to Muskerry are to be found pedigrees which contain the

¹ Ordnance Survey of Kerry, sheet 92.

names of Lochain and Cronan as father and son, and show that they lived about the middle of the seventh century. This result is arrived at by calculating the number of generations between them and other persons named in the pedigrees whose dates are determined in our *Annals*. The mountains of Muskerry are visible, at a distance of about twenty-five miles, from the hill which rises behind the Ogam monument.

Next, in proof that Cronan Mac Lochain was a Christian, we appeal to the lists of saints given in the Book of Leinster and the Leabhar Breac, in which Brocan and Cronan are mentioned as two sons of Lochain.¹

In confirmation of what I have stated with respect to the formula ANM appearing at the commencement of Ogam inscriptions which are undoubtedly Christian, such as those at Kilcolman and Caherciveen, I may observe that the element *anm* enters into the proper name *Anmchad*, which is Latinized by Animosus, and into the noun *anm-chara*, soul-friend. Mr. Brash explains ANM as meaning *requiescit*. To this explanation there are strong linguistic objections; and, even if it were correct, it would still furnish an argument against the assumption that the inscription had a pre-Christian character, the ideas of the happy repose and rest of the dead being, as might be expected, common on Christian monuments, but rarely, if ever, found on pagan ones.

In the first part of this Paper I have adduced instances such as the MARIANI and SAGITTARI inscriptions, where the presence of a Latin element is indisputable, and I have established this conclusion without being obliged to refer to the evidence of the Welsh monuments. Like the Scotch Ogams, they require to be treated as a group. It

¹ Book of Leinster, p. 353, col. 3, line 28; Leabhar Breac, p. 22, col. 2, line 21.

is enough for me to say here that their testimony on the point in question is in accordance with that which the Irish Ogams afford. But eminent scholars maintain that the Ogam, having been invented and used at a very remote period, kept its ground during several centuries, long after the introduction of Latin and Christianity into these countries, and continued to exhibit Proto-Celtic forms that were not due to the cryptic and factitious character which I suppose it to have possessed. Into this large and difficult question I hope to enter on another occasion. For the present, I think that I have given some help towards the reading and interpretation of Ogam inscriptions, by indicating the use of F to represent Filii or Feci or Fecit.

The reader who has had the patience to make his way to the end of this article cannot fail to admit that some sure and considerable progress towards the solution of the pending questions, respecting the nature and use of the Ogam character, has been made by ascertaining, with something like certainty, the identity of the persons commemorated in a number of inscriptions so well preserved that little or no doubt remains as to how they should be read. The names of Moinenn Aedhloga and Eaghomar are found in pedigrees contained in our most trustworthy MSS. They belong to persons whose dates are ascertained with sufficient precision. They are all mentioned in our ecclesiastical records, not merely as Christians, but as holding eminent places in the history of the Irish Church. They have not been selected by me for this reason. But it happened that my inquiries as to who they were, at what times they lived, and at what places they resided, found answers in our ancient manuscript authorities. With diligence and more systematic efforts we shall be able, I have no doubt, to add to the number of such instances; and our success will have a twofold result. As the testimony

of the MSS. furnishes important information as to the nature and use of the Ogam character; so in turn the Ogam monuments set a stamp of authenticity upon the manuscript materials of our history, and especially upon the genealogical collections which are preserved in them. These pedigrees are, so to speak, skeletons of history, the value of which has not been sufficiently recognized. If I could convey to other minds the impression which the examination of them has left upon my own, I feel convinced that they would be turned to good account, instead of being regarded as merely fictitious, and therefore merely curious or wholly useless.

C. LIMERICK.

May 11, 1887.

GREEK GEOMETRY FROM THALES TO
EUCLID.*

VII.

AT the close of the last part of this Paper I pointed out the connexion between its several parts, and stated the reasons for the order which I followed. This order was founded on the belief that the true history of Greek geometry was most correctly represented by exhibiting in an unbroken series the work done by Archytas and his successors. This course of proceeding led to the temporary omission of at least one geometer, who had greatly advanced the science.

Theaetetus of Athens, a pupil of Theodorus of Cyrene, and also a disciple of Socrates, is represented by Plato, in the dialogue which bears his name, as having impressed both his teachers by his great natural gifts and genius. All that we know of his work is contained in the following notices :—

* The previous portions of this Paper have appeared in HERMATHENA, Vol. iii., No. v. ; Vol. iv., No. vii. ; Vol. v., Nos. x. and xi. ; and Vol. vi., No. xii.

Within the last year the following works have been published : Euclidis *Elementa*, edidit et Latine interpretatus est J. L. Heiberg, Dr. Phil., vol. iii. librum x. continens, Lipsiae, 1886 ; *Die Lehre von den Kegelschnitten im Altertum*, von Dr. H. G. Zeuthen, zweiter halbband, Kopenhagen, 1886 ;

Notice sur les deux Lettres Arithmétiques de Nicolas Rhodas (texte Grec et traduction), par M. Paul Tannery (Extrait des notices et extraits des manuscrits de la Bibliothèque Nationale, &c., tome xxxii., 1^{re} Partie), Paris, 1886.

A new journal, devoted to the *History of Mathematics*, has been founded this year by Dr. Gustaf Eneström, of Stockholm :—*Bibliotheca Mathematica*, Journal d'Histoire des Mathématiques.

(a). He is mentioned by Eudemus in the passage quoted from Proclus in the first part of this Paper (HERMATHENA, vol. iii. p. 162), along with his contemporaries Archytas of Tarentum, and Leodamas of Thasos, as having increased the number of demonstrations of theorems and solutions of problems, and developed them into a larger and more systematic body of knowledge;¹

(b). We learn from the same source that Hermotimus of Colophon advanced yet further the stores of knowledge acquired by Eudoxus and Theaetetus, and that he discovered much of the 'Elements,' and wrote some parts of the 'Loci';²

(c). Proclus, speaking of the collection of the 'Elements' made by Euclid, says that he arranged many works of Eudoxus, and completed many of those of Theaetetus;³

(d). The theorem Euclid x. 9:—'The squares on right lines, commensurable in length, have to each other the ratio which a square number has to a square number; and conversely. But the squares on right lines incommensurable in length have not to each other the ratio which a square number has to a square number; and conversely'—is attributed to Theaetetus by an anonymous Scholiast, probably Proclus. The scholium is:—τοῦτο τὸ θεώρημα Θεαιτήτειόν ἐστιν εὕρημα καὶ μένεται αὐτοῦ Πλάτων ἐν Θεαιτήτῳ, ἀλλ' ἐκεῖ μὲν μερικώτερον ἔγκειται [ἔκκειται], ἐνταῦθα δὲ καθόλου;⁴

(e). In the passage referred to, Theaetetus relates how his master Theodorus—who was subsequently the mathematical teacher of Plato—had been writing out for him

¹ Procl. *Comm.* ed. Friedlein, p. 66.

² *Ibid.* p. 67.

³ *Ibid.* p. 68.

⁴ Knoche, *Untersuchungen über die neu aufgefundenen Scholien des Pro-*

clus Diadochus zu Euclids Elementen, p. 24, Herford, 1865; cf. F. Commandinus, *Euclidis Elementorum Libri xv., una cum Scholiis antiquis*, fol. 129, p. 2, Pisauri, 1619.

and the younger Socrates something about squares:⁵ about the squares whose areas are three feet and five feet, showing that in length they are not commensurable with the square whose area is one foot⁶ [that the sides of the squares whose areas are three superficial feet and five superficial feet are incommensurable with the side of the square whose area is the unit of surface, *i.e.* are incommensurable with the unit of length], and that Theodorus had taken up separately each square as far as that whose

⁵ Περὶ δυνάμεων τι ἡμῖν Θεόδωρος ὁδε ἔγραφε, τῆς τε τρίποδος πέντε καὶ πεντέποδος ἀποφαίνων ὅτι μήκει οὐ ξύμμετροι τῇ ποδιδίῳ. In mathematical language δύναμις signifies 'power,' especially the second power or square. In the passage (c), however, the word seems not to be used steadily in the same signification, and in 148 A it certainly means 'root.' M. Paul Tannery considers that the present text of Plato is corrupt, and that in it δύναμις (power) should be replaced throughout by δυναμένη (root). Professor Campbell (*Theaetetus of Plato*, p. 21, note) thinks that 'it is not clear that in Plato's time this point of terminology was fixed.' But, on the other hand, J. Barthélemy Saint-Hilaire believes that the expression, δύναμις, was probably invented by the Pythagoreans (*Métaphysique d'Aristote*, tome ii. p. 156, note 16). In support of this view it may be noticed that the term δυνάμει is used in its proper signification throughout the oldest fragment of Greek geometry—that handed down by Simplicius from the *History of Geometry* of Eudemus on the quadrature of the lunes (see HERMATHENA, vol. iv., pp. 196–202; and, for the revised Greek text, Simplicii in *Aristotelis Physicorum libros quatuor priores*

commentaria, ed. H. Diels, pp. 61–68, Berlin, 1882)—and is so used, for the most part, in paragraphs which, according to the *criterion* laid down in HERMATHENA, vol. iv., p. 199, note 44, must be regarded as genuine. Now since Eudemus, in this fragment, gives an analysis of the work of Hippocrates, and, moreover, frequently refers to him by name, it is probable that, in parts at least, he quoted the work on lunes textually, and that the word δυνάμει, which occurs throughout, must have been used by Hippocrates, who we know was connected with the Pythagoreans. On the whole then it seems to me probable that Plato had not fully grasped the distinction between the terms δύναμις and δυναμένη; and that in this is to be found the true explanation of the obscurity of the passage.

⁶ μήκει οὐ ξύμμετροι τῇ ποδιδίῳ. See Euclid x., *Def.* 1. Σύμμετρα μεγέθη λέγεται τὰ τῷ αὐτῷ μέτρῳ μετρούμενα, ἀσύμμετρα δέ, ὃν μηδὲν ἐνδέχεται κοινὸν μέτρον γενέσθαι. 2. Ἐθδεῖται δυνάμει σύμμετροί εἶσιν, ὅταν τὰ ἀπ' αὐτῶν τετράγωνα τῷ αὐτῷ χωρίῳ μετρήται, ἀσύμμετροι δέ, ὅταν τοῖς ἀπ' αὐτῶν τετραγώνοις μηδὲν ἐνδέχεται χωρίον κοινὸν μέτρον γενέσθαι.

area is seventeen square feet, and, somehow, stopped there. Theaetetus continues:—‘Then this sort of thing occurred to us, since the squares appear to be infinite in number,’ to try and comprise them in one term, by which to designate all these squares.’

Socr. ‘Did you discover anything of the kind?’

Theaet. ‘In my opinion we did. Attend, and see whether you agree.’

Socr. ‘Go on.’

Theaet. ‘We divided all number into two classes: comparing that number which can be produced by the multiplication of equal numbers to a square in form, we called it quadrangular and equilateral.’¹

Socr. ‘Very good.’

Theaet. ‘The numbers which lie between these, such as three and five, and every number which cannot be produced by the multiplication of equal numbers, but becomes either a larger number taken a lesser number of times, or a lesser taken a greater number of times (for a greater factor and a less always compose its sides); this we likened to an oblong figure, and called it an oblong number (*προμήκη ἀριθμόν*).’²

¹ ἐπειδὴ ἄπειροι τὸ πλῆθος αἱ δυνάμεις ἐφαίροντο. Cf. Eucl. x., Def. 3: τούτων υποκειμένων δείκνυται, ὅτι τῇ προτεθείσῃ εὐθείᾳ ὑπάρχουσιν εἶθεται πλήθει ἄπειροι σύμμετροί τε καὶ ἀσύμμετροι αἱ μὲν μήκει μόνον, αἱ δὲ καὶ δυνάμει.

² τὸν ἀριθμὸν πάντα δίχα διελάβομεν. τὸν μὲν δυνάμενον ἴσον ἰσάκεις γίγνεσθαι τῷ τετραγώνῳ τὸ σχῆμα ἀπεικάζαντες τετραγώνον τε καὶ ἰσόπλευρον προσείπομεν. Cf. Eucl. vii., Def. 19: τετράγωνος ἀριθμὸς ἐστὶν ὁ ἰσάκεις ἴσος ἢ [δ] ὑπὸ δύο ἴσων ἀριθμῶν περιεχόμενος; also Aristotle, *Anal. Post.* i. 4: οἷον

τὸ εὐθὺ ὑπάρχει γραμμῇ καὶ τὸ περιφερές, καὶ τὸ περιττὸν καὶ ἄρτιον ἀριθμῷ, καὶ τὸ πρῶτον καὶ σύνθετον καὶ ἰσόπλευρον καὶ ἑτερόμηκες (see Euclid, vii., Def. 7, 6, 12, 14). Plato's expression is tautologous.

³ τὸν τοίνυν μεταξὺ τούτου, ὅν καὶ τὰ τρία καὶ τὰ πέντε καὶ πᾶς ὅς ἀδύνατος ἴσος ἰσάκεις γενέσθαι, ἀλλ' ἢ πλείων ἐλαττονάκεις ἢ ἐλάττων πλεονάκεις γίγνεται, μείζων δὲ καὶ ἐλάττων ἀεὶ πλευρὰ αὐτὸν περιλαμβάνει, τῷ προμήκει αὐτὸ σχήματι ἀπεικάζαντες προμήκη ἀριθμὸν ἐκαλέσαμεν. Cf. Euclid, vii., Def. 17: Ὅταν δὲ δύο ἀριθμοὶ πολλαπλασιάσαντες

Socr. 'Capital! What next?'

Theaet. 'The lines which form as their squares an equilateral plane [square] number we defined as μήκος [length, *i. e.* containing a certain number of linear units],

ἀλλήλους ποιῶσί τινα, ὁ γινόμενος ἐπί-
πεδος καλεῖται, πλευραὶ δὲ αὐτοῦ οἱ
πολλαπλασιδύσαντες ἀλλήλους ἀριθμοί.
From the time of Pythagoras—to
whom the combination of arithmetic
with geometry was due—the properties
of numbers were investigated geomet-
rically. Thus composite numbers
(σύνθετοι) were figured as rectangles,
whose sides (πλευραὶ) are the factors.
Similarly, prime numbers (πρώτοι) were
represented by points ranged along a
right line, and were hence called linear
(γραμμικοί) not only by Theon of
Smyrna (*Arithm.* ed. de Gelder, p.
34), and Nicomachus (*Nicom. G.*
Introd. Arithm. ii. c. 7), but also by
Speusippus, who wrote a little work *On*
Pythagorean numbers (see *Theologu-*
mena Arithmetica, ed. Ast., p. 61).
Prime numbers were also figured as
rectangles whose common breadth was
the linear unit, and they are thus re-
presented in this passage.

In geometry τὸ ἑτερόμηκες signified
a rectangle, and was so defined by
Euclid, Book i. *Def.* 22: τῶν δὲ
τετραπλεύρων σχημάτων τετράγωνον
μὲν ἔστιν, ὃ ἰσόπλευρόν τέ ἐστι καὶ
ὀρθογώνιον, ἑτερόμηκες δὲ, ὃ ὀρθογώνιον
μὲν, οὐκ ἰσόπλευρον δέ. Cf. Hero,
Def. 53; *Geom.* pp. 43, 52, 53, &c.,
ed. Hultsch; Pappi Alex. *Collect.*, ed.
Hultsch, vol. i., p. 140. Euclid does not
use the term ἑτερόμηκες in his *Elements*,
but παραλληλόγραμμον ὀρθογώνιον. It is
now generally recognised that he de-
rived the materials of his *Elements*

from various sources: the term ἑτερό-
μηκες may thus have been preserved in
his work: or, else, he thought it better
to avoid the use of this term, as it was
employed in a particular sense. When
the sides of the rectangle were expressed
in numbers, προμήκης was the general
name for an oblong. In the particular
cases where the sides of the oblong
contained two consecutive units, as—
2, 3; 3, 4; &c., the term ἑτερομήκης
was employed, inasmuch as the lengths
of the sides were of different kinds, *i. e.*
odd and even; whereas in a square they
were of the same kind, either both
odd, or both even (see the first part of
this Paper, HERMATHENA, vol. iii.,
p. 188, note 85). It should be ob-
served that when a square is con-
structed equal to an oblong of this
kind (ἑτερόμηκες), its side must be in-
commensurable; but in certain cases the
side of the square, which is equal to an
oblong of the former kind (πρόμηκες)
(*e. g.* whose sides are 8, 2; 3, 27; and so
on) is commensurable. The two words
are used in this passage in their strict
signification, and are not, as M. Paul
Tannery thinks, synonymous (see *Dom-*
ninos de Larissa, Bulletin des Sciences
Mathématiques, t. viii., 1884, p. 297).
Professor Campbell remarks: 'these
terms [προμήκης, ἑτερομήκης] were dis-
tinguished by the later Pythagoreans'
(*loc. cit.*, p. 23, note). This is mis-
leading, for it seems to imply that
they were not distinguished by the
early Pythagoreans,

and the lines which form as their squares an oblong number (τὸν ἑτερομήκη) we defined as δυνάμεις inasmuch as they have no common measure with the former in length, but in the surfaces of the squares, which are equivalent to these oblong numbers. And in like manner with solid numbers.'¹⁰

Socr. 'The best thing you could do, my boys, or any other man.'—(*Theaetetus*, 147 D–148 B.)

(*f*). We learn from Suidas that he taught at Heraclea, and that he first wrote on 'the five solids' as they are called.¹¹

Eudoxus and Theaetetus, then, were the original thinkers to whom—after the Pythagoreans—Euclid was most indebted in the composition of his 'Elements.' In the former parts of this Paper we have seen that we owe to the Pythagoreans the substance of the first, second, and fourth Books, also the doctrine of proportion and of the similarity of figures, together with the discoveries respecting the *application*, *excess*, and *defect* of areas¹²—the subject

¹⁰ ὅσαι μὲν γραμμαὶ τὸν ἰσόπλευρον καὶ ἐπίπεδον ἀριθμὸν τετραγωνίζουσι, μήκος ὀρισμέθεα, ὅσαι δὲ τὸν ἑτερομήκη, δυνάμεις, ὥς μήκει μὲν οὐ ξυμμέτρους ἐκαίνας, τοῖς δ' ἐπιπέδοις ἂ δύνανται· καὶ περὶ τὰ στερεὰ ἄλλο τοιοῦτον. Cf. Euclid, vii., *Def.* 18: ὅταν δὲ τρεῖς ἀριθμοὶ πολλαπλασιάζαντες ἀλλήλους ποιῶσι τινα, ὃ γινόμενος στερεὸς ἐστίν, πλευραὶ δὲ αὐτοῦ οἱ πολλαπλασιάζαντες ἀλλήλους ἀριθμοὶ. Solid numbers (στερεοί) were also treated in the little work of Speusippus referred to above (*Theol. Arith. loc. cit.*).

¹¹ 'Theaetetus, of Athens, astronomer, philosopher, disciple of Socrates, taught at Heraclea. He first wrote on "the five solids" as they are called. He lived after the Pelopon-

nesian War.'

'Theaetetus, of Heraclea in Pontus, philosopher, a pupil of Plato.' *Sub v.*

It has been conjectured that the two Notices refer to the same person. Making every allowance for the inaccuracy of Suidas, this seems to me by no means probable. It is much more likely that the second was a son, or relative, of Theaetetus of Athens, and sent by him to his native city to study at the Academy under Plato.

¹² By this method the Pythagoreans solved geometrical problems, which depend on the solution of quadratic equations. For examples of the method see HERMATHENA, vol. iii., p. 196; vol. iv., p. 199, note 45.

matter of the sixth Book : the theorems arrived at, however, were proved for commensurable magnitudes only, and assumed to hold good for all. We have seen, further, that the doctrine of proportion, treated in a general manner, so as to include incommensurables (Book v.), and, consequently, the re-casting of Book vi., and also the Method of Exhaustions (Book xii.), were the work of Eudoxus. If we are asked now—In what portion of the Elements does the work of Theaetetus survive? We answer: since Books vii., viii., and ix. treat of numbers, and our question concerns geometry; and since the substance of Book xi., containing, as it does, the basis of the geometry of volumes, is probably of ancient date, we are led to seek for the work of Theaetetus in Books x. and xiii.: and it is precisely with the subjects of these Books that the extracts (*d*), (*e*), and (*f*), are concerned.

Having regard, however, to the difference in the manner of expression of Proclus in (*c*):—‘Euclid *arranged* many works of Eudoxus, and *completed* many of those of Theaetetus’—we infer that, whereas the bulk of the fifth and twelfth books are due to Eudoxus, on the other hand Theaetetus laid the foundation only of the doctrine of incommensurables, as treated in the tenth Book. In like manner from (*f*) we infer that the thirteenth Book, treating of the regular solids, is based on the theorems discovered by Theaetetus; but it contains, probably, ‘a recapitulation, at least partial, of the work of Aristaeus’ (see HERMATHENA, vol. vi., p. 127).

From what precedes, it follows that the principal part of the original work of Euclid himself, as distinguished from that of his predecessors, is to be found in the tenth Book.¹³ De Morgan suspected that in this Book some

¹³ See Heiberg., *Litterargeschichtliche Studien über Euklid*, p. 34:

‘Nach Proklus hat er [Euklid] vieles

von den Untersuchungen des Theätet vervollkommenet; also, da Theätet sich besonders mit Inkommensurabilität und

definite object was sought, and suggested that the classification of incommensurable quantities contained in it was undertaken in the hope of determining thereby the ratio of the circumference of the circle to its diameter, and thus solving the vexed question of its quadrature.¹⁴ It is more probable, however, that the object proposed concerned rather the subject of Book xiii., and had reference to the determination of the ratios between the edges of the regular solids and the radius of the circumscribed sphere, ratios which in all cases are irrational.¹⁵ In this way is seen, on the one hand, the connexion which exists between the two parts of the work of Theaetetus, and, on the other, light is thrown on the tradition handed down by Proclus, and referred to at the end of the last part of this Paper, that 'Euclid proposed to himself the construction of the so-called Platonic bodies [the regular solids] as the final aim of his systematization of the Elements.'

We are not justified in inferring from the passage in *Theaetetus* (e), that Theodorus had written a work on 'powers' or 'roots,' much less that the contribution of the Pythagoreans to the doctrine of incommensurables was limited to proving the incommensurability of the diagonal and side of a square, *i. e.* of $\sqrt{2}$.¹⁶ Theodorus,

Irrationalität beschäftigte, darf wohl einiges von dem sehr umfangreichen und vollständigen X Buche dem Euklid selbst angeeignet werden, was und wie viel, wissen wir nicht.'

Professor P. Mansion, of the University of Ghent, informs me by a letter of the 4th March, 1887, that for several years past he has pointed out this result—the originality of the tenth Book of the Elements of Euclid—to his pupils in his Course on the History of Mathematics. His manner of proof is substantially the same as that given by me above.

See also P. Tannery: *L'Éducation Platonicienne*, Revue Philosophique, Mars, 1881, p. 225; *La Constitution des Éléments*, Bulletin des Sciences Mathématiques, Aout, 1886, p. 190.

¹⁴ The English Cyclopaedia, *Geometry*, vol. iv., 375; Smith's Dictionary of Greek and Roman Biography and Mythology, *Euclides*, vol. ii., p. 67.

¹⁵ See Bretschneider, *Geom. v. Eukl.*, p. 148.

¹⁶ See P. Tannery, *op. cit.*, pp. 188, 189.

who was a teacher of mathematics, is represented in the passage merely as showing his pupils the incommensurability of $\sqrt{3}$, $\sqrt{5}$, . . . $\sqrt{17}$, and there is no evidence that this work was original on his part. On the contrary, the knowledge of the incommensurability of $\sqrt{5}$, at all events, must be attributed to the Pythagoreans, inasmuch as it is an immediate consequence of the incommensurability of the segments of a line cut in extreme and mean ratio, which must have been known to them, and from which indeed it is probable that the existence of incommensurable lines was discovered by Pythagoras himself (see HERMATHENA, vol. iii., p. 198, and vol. v., p. 222).

There are, moreover, good reasons for believing that the Pythagoreans went farther in this research than has been sometimes supposed; indeed Eudemus says expressly: 'Pythagoras discovered the theory of incommensurable quantities (*τῶν ἀλόγων πραγματείαν*). Further, the lines $\sqrt{3}$, $\sqrt{5}$, . . . would occur in many investigations with which we know the Pythagoreans were occupied:—

1°. In the endeavour to find the so-called *Pythagorean triangles*, i. e. right-angled triangles in rational numbers;

2°. In the determination of a square, which shall be any multiple of the square on the linear unit, a problem which can be easily solved by successive applications of the 'Theorem of Pythagoras'—the first right-angled triangle, in the construction, being isosceles, whose equal sides are the linear unit, the second having for sides about the right angle the hypotenuse of the first ($\sqrt{2}$) and the linear unit; the third having for sides about the right angle $\sqrt{3}$ and 1, and for hypotenuse 2, and so on;

3°. In the construction of the regular polygons, for the third triangle in 2° is in fact the so-called 'most beautiful right-angled scalene triangle' (see HERMATHENA, vol. iii., p. 194).

4°. In finding a mean proportional between two given

lines, or the construction of a square which shall be equal to a given rectangle, in the simple case when one line is the linear unit, and the other contains 3, 5, . . . units.

The method followed in this Paper differs altogether from that pursued by most writers. The usual course has been to treat of the works of Archytas, Theaetetus, Eudoxus, Menaechmus, &c.—the men to whom in fact, as we have seen, the progress of geometry at that time was really due—under the head of ‘Plato and the Academy.’ This has given rise to an exaggerated view of the services of Plato and of the Academy in the advancement of mathematics; which is the more remarkable because a just appreciation of the services of Plato in this respect was made by Eudemus in the summary of the history of geometry, so frequently quoted in these pages:

‘Plato, who came next after them [Hippocrates of Chios, and Theodorus of Cyrene], caused the other branches of knowledge to make a very great advance through his earnest zeal about them, and especially geometry: it is very remarkable how he crams his essays throughout with mathematical terms and illustrations, and everywhere tries to rouse an admiration for them in those who embrace the study of philosophy.’¹⁷

The way in which Plato is here spoken of is in striking contrast to that in which Eudemus has, in the summary, written of the promoters of geometry.

¹⁷ Πλάτων δ' ἐπὶ τούτοις γενόμενος, μεγίστην ἐποίησεν ἐπίδοσιν τὰ τε ἄλλα μαθήματα καὶ τὴν γεωμετρίαν λαβεῖν διὰ τὴν περὶ αὐτὰ σπουδὴν, ὅς περ δῆλός ἐστι καὶ τὰ συγγράμματα τοῖς μαθηματι-

κοῖς λόγοις καταπικνύσας καὶ πανταχοῦ τὸ περὶ αὐτὰ θαῦμα τῶν φιλοσοφίας ἀντεχομένων ἐπεγείρων. Proclus, *op. cit.*, p. 66.

GEORGE J. ALLMAN.

QUEEN'S COLLEGE, GALWAY.

ON OBSERVATIONS RELATING TO SEVERAL QUANTITIES.

IT is proposed here to treat those difficulties in the reduction of observations which are peculiar to the case of plural *quæsitæ*. I have elsewhere¹ considered the generic problem and the simpler species. The subject presents two headings—(I.) the method of determining the best values for the quantities under observation; and (II.) the error incident to that determination.

I.—Under the first heading there arises no particular difficulty, as long as we confine ourselves to the typical case where the law of facility is a Probability-curve. We may determine the most probable (which are also the ‘most’ advantageous’) values of the *quæsitæ* by *Inverse Probability*, after the manner of Chauvenet,² Merri-
man,³ and others.

When we pass to the case of laws of facility other than Probability-curves, the genuine Inverse Probability is no longer available. We must fall back upon those second best and third best courses, which are designated as the *Method of Least Squares* and the⁴ *Method of Situation*. The philosophic basis of the *Method of Least Squares* is not more obscure in the case of plural *quæsitæ* than for the simpler type. The only peculiar difficulties are mathe-

¹ See my little study on the Art of Measurement, entitled *Metretike* [London, Temple & Co., 1887], and the Papers there referred to; in particular *Camb. Phil. Trans.*, 1885.

² *Ibid.*

³ *Astronomy*, Appendix, Art. XI.

⁴ *Method of Least Squares* (1885), Art. 41.

⁵ See Laplace, *Théor. Anal.*, Supplement 2, second division, Art. 2; also *Mécanique Céleste*, iii. 29. Cp. Appendix to *Metretike*.

matical, and they have been⁶ removed by the mathematicians.

The *Method of Situation* is a less threadbare subject. It will be recollected that in the simple case of a single quæsitum that method is as follows:—Arrange the values of the sought quantity, which are derived from the n given observations in the order of their magnitudes, and put for the quæsitum the value which is at the middle of that row; that is, the $\frac{n+1}{2}$ th, n being odd, and a mean between the

$\frac{n}{2}$ th and $\left(\frac{n}{2} + 1\right)$ th, n being even. That is, supposing the observations are all of the same weight; otherwise, the following modification is required:—Let $h_1, h_2, \&c., h_n$ be the *precisions*⁷ of the respective observations which are arranged in the descending order of the magnitudes ascribed to the quæsitum by the corresponding equations, so that h_1 , for instance, is the coefficient belonging to the equation which yields the largest value for the quæsitum. Find h_r , so that

$$h_1 + h_2 + \&c. + h_{r-1} < \frac{1}{2} Sh; \text{ and } h_1 + h_2 + \&c. + h_r > \frac{1}{2} Sh.$$

Then put the value derived from the r^{th} equation for the quæsitum. What now is the analogue of this procedure in the case of plural quæsita?

A half answer to this question is given by Laplace in the remarkable hybrid⁸ between the *Method of Least Squares* and the *Method of Situation*, which he has described in the *Mécanique Céleste*, Book iii., s. 40. There being given a number of linear equations for two vari-

⁶ See Mr. Glaisher's Paper in the *Memoirs of the Astronomical Society*, XL.

⁷ Laplace, *Théorie Analytique*, Supplément ii., p. 616, Nat. Ed. The reason of the rule is given at p. 618.

⁸ Even in the case of the single *quæsitum*, Laplace has not shrunk from mixing the methods of *Squares* and *Situation*.—*Théor. Anal.*, p. 619, Nat. Ed.

ables, y and z , he first obtains *one* equation according to the usual procedure of the *Method of Least Squares*. With the aid of the one equation obtained by that reduction and *each* of the given equations, he then, eliminating z , obtains n values for y . He then determines the median of these values by the *Method of Situation*. Putting that median as the value of y , he obtains the value of z from the aforesaid normal equation.* It does not appear that this intermediate method can be helpfully extended to the case of numerous quæsitæ: the ingredient with which the Arithmetic Mean is tempered becomes relatively less. The peculiar advantages of the *Method of Situation*, its saving of labour, and appropriateness to¹⁰ Discordant Observations, would not be obtained in an appreciable degree.

I propose, therefore, to investigate a more genuine analogue, as follows:—Consider, first, the simple case in which there are only two quæsitæ. Let the given equations be of the form

$$a_1x + b_1y - w_1 = 0,$$

$$a_2x + b_2y - w_2 = 0, \text{ \&c.,}$$

where w_1, w_2 , &c., are observations subject to equal error. According to the usual procedure we obtain for one locus (of the sought point xy) the 'normal equation'

$$a_1[a_1x + b_1y - w_1] + a_2[a_2x + b_2y - w_2] + \text{\&c.} = 0;$$

* The passage in the *Mécanique Céleste* leads up to the mention of the method described in his preceding article, and in the *Théorie* (iv. 24) for determining the system in which the greatest error possible est, 'Abstraction faite du signe, moindre que dans tout autre système.' The analogue of this procedure in the simplest case of a single quæsitum represented by n observations of equal weight,

would be, I think, to take the point equidistant from the maximum and minimum observation, x_1 and x_2 . Its use might be to form a summary test whether the given observations (whose error is supposed known *a priori*) can be regarded as relating to one and the same quantity.

¹⁰ See my Paper 'On the Choice of Means,' *Philosophical Magazine*, 1887.

$$x_1, x_2, \text{ \&c., } x_n,$$

which may be thus interpreted. Substitute any assigned value for y in the original equations. Of the n values for x thus presented, the (weighted) Arithmetical Mean is given by substituting the assigned value for y in the 'normal' equation. The analogous procedure is to find a locus such that if we substitute any assigned value of y in the original equations, the *Median* of the corresponding n values of x may be given by the locus. The series of points, which in the case of the Arithmetical Mean is obtained by a single stroke of analysis, must, in the case of the Median, be traced one by one. That is, we must substitute in the given equations successive values of y

(e.g. 0, δ , 2δ , &c.),

find the Median value for x corresponding to each assigned y , and plot the series of points. A second Median Curve is afforded by the Medians of the y components; and the intersection of these Median Curves gives the *Median Point*. The method is perfectly general.

As an illustration, we may take the case of two quæsitæ, x and y , the equations for which involve each only one of the variables. The *Mean loci* are in this case lines parallel to the axes. And it follows, from considerations which I have¹¹ elsewhere put together, that the Median, as compared with the Arithmetical Mean, affords a solution nearly as good when the typical Probability-curve prevails, and better when the observations are 'discordant.'

As a rather less elementary illustration, suppose that the data consisted of three groups of equations—the first

of the form $x = a_1, \quad x = a_2, \quad \&c.;$

the second $y = b_1, \quad y = b_2, \quad \&c.;$

the third $x + y = c_1, \quad x + y = c_2, \quad \&c.$

¹¹ 'On the Choice of Means,' *Phil. Mag.*, 1887.

We might take for the first group Professor Newcomb's¹² 684 observations (on Transits of Mercury), referred to in my Paper 'On the Choice of Means'; for the second group, the observations recorded by Sir G. Airy, in an Appendix to his *Theory of Errors*; and for the third group (with a slight modification to be mentioned), the forty observations referred to in the same Paper, as cited by¹³ Chauvenet from Bessel. Let us put the Arithmetic Means of the a 's and of the b 's each equal to zero, and suppose each of the c 's to be so increased by a constant quantity that the Arithmetic Mean of the c 's also is zero. It is evident that the required point is in the neighbourhood of the origin of x and y . And it will be found exceedingly easy to plot the two *Median Loci* in that neighbourhood. Thus, to find the point on the axis x , where it is struck by the locus of the Median of X -components, observe that the points where the given lines of the third group strike the axis x are

$$x = c_1, \quad x = c_2, \text{ \&c.}$$

The required point, then, is the Median of the a 's and c 's taken together. To find the corresponding point on the parallel $y = 1$, we have only to put for each c , $c - 1$, say c' , and take the Median of the a 's and c' 's. This process is not only easier than the received method, but *better*; ¹⁴ the observations being (in part) *discordant*.

II.—There occurs to me only one other¹⁵ point deserving notice as peculiar to the case of plural *quasita*—the *error* incurred by the solution. We may with sufficient gene-

¹² *American Journal of Mathematics*, 1885.

¹³ *Astronomy*, Art. 17.

¹⁴ See the Paper just referred to.

¹⁵ I have not studied Cauchy's Method

of Interpretation, referred to by Dr. Merriman in his valuable list of writings relating to the *Method of Least Squares*.

rality consider the case of two quæsitæ, x and y , given by n equations of the form

$$a_n x + b_n y = w_n,$$

where the law of error for all the w 's is the same, viz. the Probability-curve, whose modulus is c . Now, in seeking the error of x and y , we may inquire either—(1) What is the probability that the value assigned to x will not differ from the real value by more than a certain extent, *irrespective of the error of y* ? Or (2) What is the probability that *both* x and y will keep within assigned limits (whether the same or not for each)?

The most probable values of x and y correspond to the maximum height of a surface whose equation is of the form

$$\frac{-(a_1 x + b_1 y - w_1)^2 + (a_2 x + b_2 y - w_2)^2 + \&c.}{c^2};$$

$$z = kc$$

a *Probabiloid*, as I venture to call it. Now—(1) the first of the two species of error just distinguished is to be obtained by integrating z with reference to y between infinite limits, and taking the error of the resulting Probability-curve in x . From the known properties of the Probabiloid, it is evident that the sought error is that which is given by¹⁶ Laplace. If x and y are what may be called the principal axes of the Paraboloid, the sought error is the same as that which we would have obtained by taking no account of y at all.

For the second purpose—(2) it is proper to ascertain the solid contents of the Paraboloid intercepted by (perpendiculars raised at the extremity of) a certain area in the plane xy : say a square, or a circle, or ellipse, having the same centre as the Probabiloid. Such seems to be the

¹⁶ *Théor. Analytique*, Book iv., No. 21.

gist of M. Beynamè's difficult Paper in *Liouville's Journal* for 1852. His reasonings are elaborate, and his conclusions, doubtless, correct; but he is surely guilty of a serious *ignotio elenchi*, if he confounds the two species of error above distinguished. He appears to do so, when he accuses Laplace and others of having exaggerated the precision of the *Method of Least Squares*. Thus, in the calculation of the mass of Jupiter, instanced by Laplace in his first supplement, there being six unknown quantities, M. Beynamè reduces the odds against a certain extent of error from 1,000,000 (to 1), the estimate of Laplace, to 1160. It is clear, however, that Laplace is concerned¹⁷ with the error in the determination of the mass of Jupiter, *irrespective of the five ancillary quæsitæ* which the calculation involves. The adverse reasoning may be profound, but it is not fatal to Laplace.—*Meres profundo, pulchrior evenit.*

¹⁷ Cp. *Théor. Analytique*, Book ii., Ch. 4, Art. 21.

F. Y. EDGEWORTH.

KING'S COLLEGE, LONDON.

ON THE LINEAR RELATIONS BETWEEN THE NINE POINTS OF INTERSECTION OF A SYSTEM OF PLANE CUBIC CURVES.

LET the nine points of intersection be $A, B, C, D, E, F, G, H, I$, and let G, H, I be the vertices of the triangle whose sides are the axes of trilinear co-ordinates α, β, γ ; the relative values of these co-ordinates being such that an arbitrarily-assumed line may be represented by the equation $\alpha + \beta + \gamma = 0$. This line will cut the axes at the points $(0, 1, -1), (-1, 0, 1), (1, -1, 0)$; and if the co-ordinates of A be $(\alpha_1, \beta_1, \gamma_1)$, of B $(\alpha_2, \beta_2, \gamma_2)$. . . of F $(\alpha_6, \beta_6, \gamma_6)$, the line drawn from A to $(0, 1, -1)$ will cut β and γ at the points $(\alpha_1, 0, \beta_1 + \gamma_1), (\alpha_1, \beta_1 + \gamma_1, 0)$, and lines drawn from these points to H and I will meet at the point $(\alpha_1, \beta_1 + \gamma_1, \beta_1 + \gamma_1)$, from which point, if a line be drawn to A , it will cut α at the point $(0, \frac{1}{\beta_1}, \frac{1}{\gamma_1})$. The point similarly found on β , by means of a line drawn from A to the second point $(-1, 0, 1)$, will be $(\frac{1}{\alpha_1}, 0, \frac{1}{\gamma_1})$, and the corresponding point on γ will be $(\frac{1}{\alpha_1}, \frac{1}{\beta_1}, 0)$: the three lines drawn from these points to G, H, I will meet at the point $(\frac{1}{\alpha_1}, \frac{1}{\beta_1}, \frac{1}{\gamma_1})$ which is the inverse of A , and may be denoted by A' . Similarly, points B', C', D', E', F' may be found inverse of B, C, D, E, F . It is obvious that the position of these inverse points depends on the position of the arbitrary line, denoted as above, by the equation $\alpha + \beta + \gamma = 0$.

Now, the equation of any cubic passing through the seven points A, B, C, F, G, H, I , must be of the form $aP = mbQ$; where $a = 0$ is the equation of AF ; $b = 0$ that of BF ; $P = 0$ that of the conic through $BCGHI$; $Q = 0$ that of $ACGHI$, and m an arbitrary constant. If this cubic passes also through D and E ; and if $a_4, a_5, \&c.$, are the results of substituting the co-ordinates of D and E for the running co-ordinates in a , $\&c.$, we will have

$$\frac{a_4 b_5}{b_4 a_5} = \frac{Q_4 P_5}{P_4 Q_5}, \quad (1)$$

which is the relation between the nine points of intersection.

To reduce this relation to a linear form, it is to be observed, that if O is the middle point of the chord of P which passes through D and E , and if the polars of D and E cut this chord at p_4 and p_5 ; then

$$P_5 : P_4 = Eo Ep_5 : Do Dp_4;$$

$$\text{but} \quad Eo : Do = Op_4 : Op_5 = Ep_4 : Dp_5;$$

$$\text{therefore} \quad P_5 : P_4 = Ep_4 Ep_5 : Dp_4 Dp_5. \quad (2)$$

In like manner, if the polars with regard to Q cut the same line at q_4 and q_5 ,

$$Q_4 : Q_5 = Dq_4 Dq_5 : Eq_4 Eq_5. \quad (3)$$

Now the polar of D with regard to P is given by the equation—

$$\frac{\alpha}{a_2 a_3} \left(\frac{\beta_4 (a_2 \beta_3)}{\beta_2 \beta_3} + \frac{\gamma_4 (\gamma_2 a_3)}{\gamma_2 \gamma_3} \right) + \frac{\beta}{\beta_2 \beta_3} \left(\frac{\gamma_4 (\beta_2 \gamma_3)}{\gamma_2 \gamma_3} + \frac{a_4 (a_2 \beta_3)}{a_2 a_3} \right) + \frac{\gamma}{\gamma_2 \gamma_3} \left(\frac{a_4 (\gamma_2 a_3)}{a_2 a_3} + \frac{\beta_4 (\beta_2 \gamma_3)}{\beta_2 \beta_3} \right) = 0,$$

and the polar of E is given by changing 4 to 5; therefore

$$\begin{aligned} \frac{Ep_4}{Dp_4} &= \left(\frac{a_4 \beta_5 + \beta_4 a_5}{a_2 \beta_2 a_3 \beta_3} (a_2 \beta_3) + \frac{\beta_4 \gamma_5 + \gamma_4 \beta_5}{\beta_2 \gamma_2 \beta_3 \gamma_3} (\beta_2 \gamma_3) + \frac{\gamma_4 a_5 + a_4 \gamma_5}{\gamma_2 a_2 \gamma_3 a_3} (\gamma_2 a_3) \right) \\ &: 2 \left(\frac{a_4 \beta_4 (a_2 \beta_3)}{a_2 \beta_2 a_3 \beta_3} + \frac{\beta_4 \gamma_4 (\beta_2 \gamma_3)}{\beta_2 \gamma_2 \beta_3 \gamma_3} + \frac{\gamma_4 a_4 (\gamma_2 a_3)}{\gamma_2 a_2 \gamma_3 a_3} \right). \end{aligned}$$

And in like manner,

$$\frac{Ep_4}{Dp_4} = 2 \left(\frac{a_5 \beta_5 (a_2 \beta_2)}{a_2 \beta_2 a_3 \beta_3} + \frac{\beta_5 \gamma_5 (\beta_2 \gamma_2)}{\beta_2 \gamma_2 \beta_3 \gamma_3} + \frac{\gamma_5 a_5 (\gamma_2 a_2)}{\gamma_2 a_2 \gamma_3 a_3} \right) + \left(\frac{a_4 \beta_5 + \beta_4 a_5}{a_2 \beta_2 a_3 \beta_3} (a_2 \beta_2) + \frac{\beta_4 \gamma_5 + \gamma_4 \beta_5}{\beta_2 \gamma_2 \beta_3 \gamma_3} (\beta_2 \gamma_2) + \frac{\gamma_4 a_5 + a_4 \gamma_5}{\gamma_2 a_2 \gamma_3 a_3} (\gamma_2 a_2) \right);$$

therefore

$$\frac{P_5}{P_4} = \frac{Ep_4 \cdot Ep_5}{Dp_4 \cdot Dp_5} = \left(\frac{a_5 \beta_5 (a_2 \beta_2)}{a_2 \beta_2 a_3 \beta_3} + \frac{\beta_5 \gamma_5 (\beta_2 \gamma_2)}{\beta_2 \gamma_2 \beta_3 \gamma_3} + \frac{\gamma_5 a_5 (\gamma_2 a_2)}{\gamma_2 a_2 \gamma_3 a_3} \right) : \left(\frac{a_4 \beta_4 (a_2 \beta_2)}{a_2 \beta_2 a_3 \beta_3} + \frac{\beta_4 \gamma_4 (\beta_2 \gamma_2)}{\beta_2 \gamma_2 \beta_3 \gamma_3} + \frac{\gamma_4 a_4 (\gamma_2 a_2)}{\gamma_2 a_2 \gamma_3 a_3} \right) \\ = \frac{a_5 \beta_5 \gamma_5}{a_4 \beta_4 \gamma_4} \left| \begin{array}{ccc} \frac{1}{a_2} & \frac{1}{\beta_2} & \frac{1}{\gamma_2} \\ \frac{1}{a_3} & \frac{1}{\beta_3} & \frac{1}{\gamma_3} \\ \frac{1}{a_4} & \frac{1}{\beta_4} & \frac{1}{\gamma_4} \end{array} \right| : \left| \begin{array}{ccc} \frac{1}{a_2} & \frac{1}{\beta_2} & \frac{1}{\gamma_2} \\ \frac{1}{a_3} & \frac{1}{\beta_3} & \frac{1}{\gamma_3} \\ \frac{1}{a_4} & \frac{1}{\beta_4} & \frac{1}{\gamma_4} \end{array} \right|. \quad (4)$$

Similarly,

$$\frac{Q_4}{Q_5} = \frac{Dq_4 \cdot Dq_5}{Eq_4 \cdot Eq_5} = \frac{a_4 \beta_4 \gamma_4}{a_5 \beta_5 \gamma_5} \left| \begin{array}{ccc} \frac{1}{a_1} & \frac{1}{\beta_1} & \frac{1}{\gamma_1} \\ \frac{1}{a_3} & \frac{1}{\beta_3} & \frac{1}{\gamma_3} \\ \frac{1}{a_4} & \frac{1}{\beta_4} & \frac{1}{\gamma_4} \end{array} \right| : \left| \begin{array}{ccc} \frac{1}{a_1} & \frac{1}{\beta_1} & \frac{1}{\gamma_1} \\ \frac{1}{a_3} & \frac{1}{\beta_3} & \frac{1}{\gamma_3} \\ \frac{1}{a_5} & \frac{1}{\beta_5} & \frac{1}{\gamma_5} \end{array} \right|; \quad (5)$$

therefore

$$\frac{Q_4 P_5}{P_4 Q_5} = \frac{\left(\frac{1}{a_1} \frac{1}{\beta_2} \frac{1}{\gamma_4} \right) : \left(\frac{1}{a_2} \frac{1}{\beta_3} \frac{1}{\gamma_5} \right)}{\left(\frac{1}{a_1} \frac{1}{\beta_3} \frac{1}{\gamma_5} \right) : \left(\frac{1}{a_2} \frac{1}{\beta_2} \frac{1}{\gamma_4} \right)} = C(A'D'BE); \quad (6)$$

but

$$\frac{a_4 b_5}{b_4 a_5} = F(ADBE); \quad (7)$$

therefore, by eq. (1), these anharmonic ratios are equal to one another. Hence the relations between the points of intersection and the inverse points, as already defined, may be expressed by the series of anharmonics—

$$A'(BC'D'E') = F(BCDE); \quad B'(C'D'E'A') = F(CDEA); \\ C'(D'E'A'B') = F(DEAB), \text{ \&c.}$$

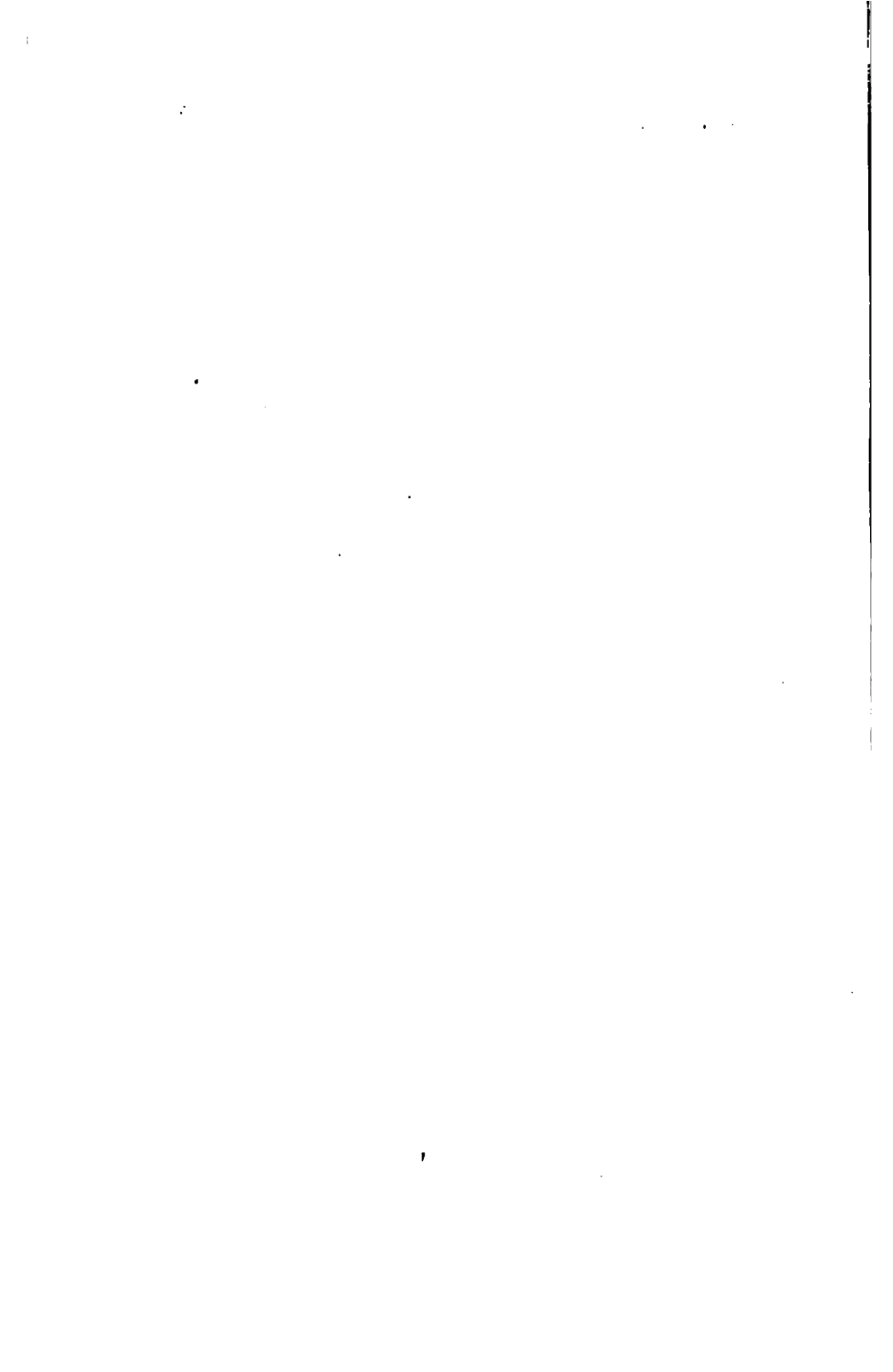
Now, if all the intersections except F are known, the

inverse points A', B', C', D', E' are also known, and F may be found by means of the following constructions :—

Let $B'C', CA', A'B'$ meet BE' at l', m', n' , and the above anharmonic ratios will be $(n'm'D'E')$, $(l'D'E'n')$, $(D'E'm'l')$; and if T be the intersection of DD' and EE' ; and l, m, n the intersections of DE with Tl', Tm', Tn' , the ratios are $(nmDE)$, $(lDEn)$, $(DEml)$; therefore, if Bn meets Cm at L , and Cl meets An at M , and Am meets Bl at N , the three hexagons $LBCDEF$, $AMCDEF$, $ABNDEF$ are inscribed in conics; so that F may be found by Pascal's theorem as follows :—

Let AE meet BC at r , and BD meet AC at s ; also, let An meet lr at U , and Bn meet ms at V ; then BC will meet DU on the conic $CMAED$, and AC will meet EV on the conic $CLBDE$. Also, if AE meets DU at R , and BD meets EV at S ; then RS passes through the intersections of opposite sides of two hexagons inscribed, respectively, in $CBD FE$ and $CAEFD$; and if this line cuts AC at d , and BC at e , then F is the intersection of Dd and Ee .

ANDREW S. HART.



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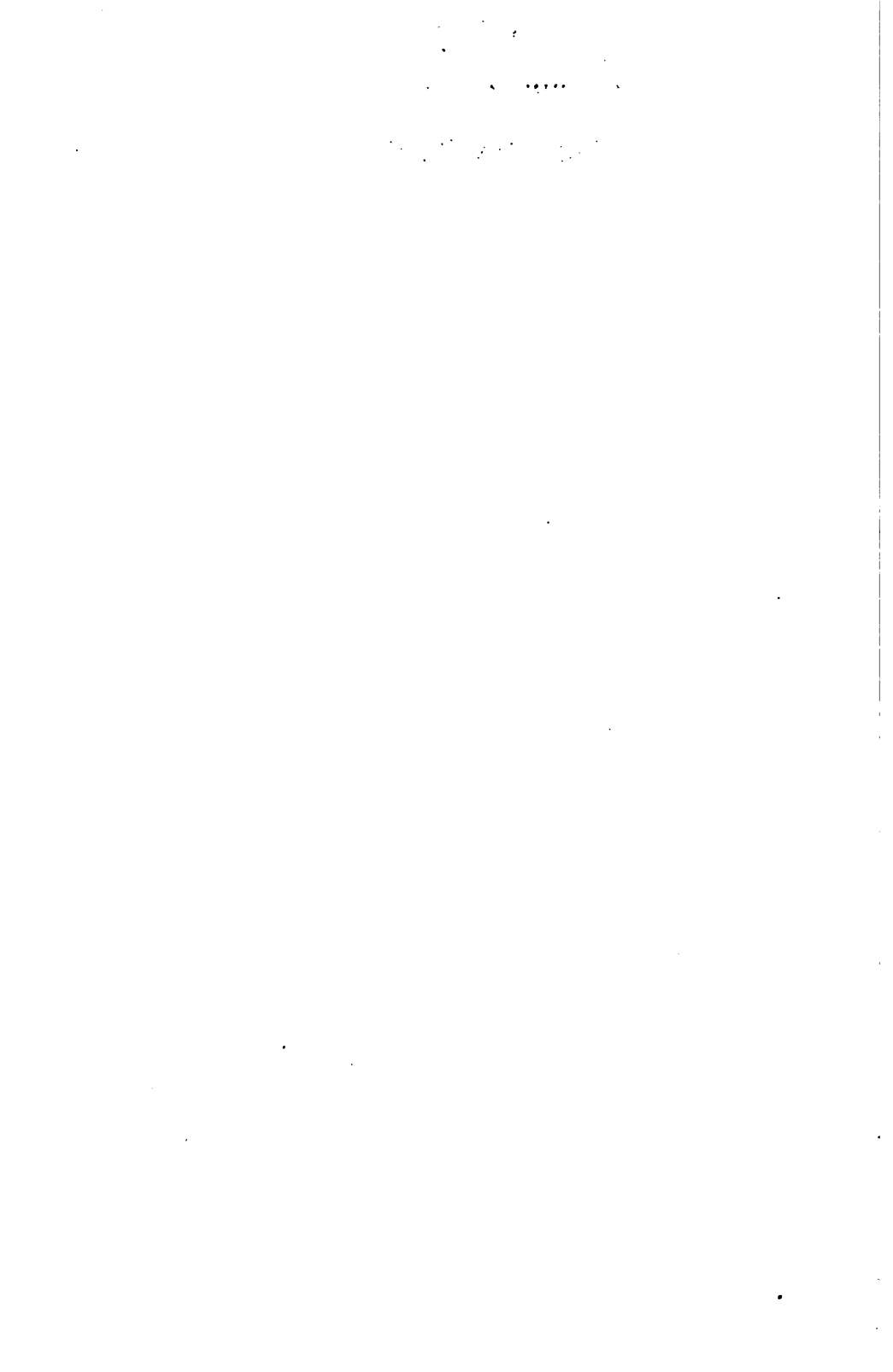


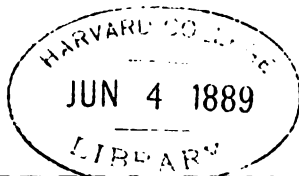
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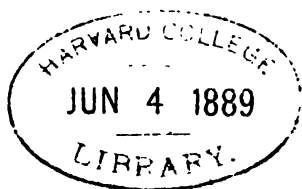
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HERMATHENA.

MISCELLANEA CRITICA.

SOPHOCLEA. *Antigone*, 746.

ὦ μαρὸν ἦθος καὶ γυναικὸς ὕστερον.

I DO not believe Sophocles wrote *μαρὸν*, for three reasons :—(1) There is neither dactyl nor anapaest as the first foot of a trimeter in this play. (2) *μαρὸς*, as applied to character, is peculiar to the comic and satyric drama, and is unknown to tragedy. The word was used like our ‘beastly,’ ‘brutal,’ as a very coarse and strong term of abuse. It is never used by Æschylus. It is only once used by Sophocles (*Trach.* 987), of pain : ἡ δ’ αὖ *μαρὰ* βρύκει : this is almost the comic use of the word, and is only excusable by the violent pain of Hercules. Euripides has the word once in his extant tragedies applied to Cithaeron literally ‘polluted’ by the blood of Pentheus, *Bacch.* 1384 : once again in his lost tragedies (*Auge Frag.* 268), in the literal sense, of spoils ‘polluted’ by blood. He uses it also twice, of persons, as a term of abuse ; but both of these instances are in satyric dramas : *Cyclops*, 678 ; *Sisyphus, Frag.* 268. And Aristophanes has it scores of times as a term of abuse. Jebb, in his late beautiful edition, translates it here, ‘dastard’ ; but that is a sense which it will be difficult to support by illustration. *μαρὸς* seems to be

something like the Latin *improbus*, though coarser, and denotes an utterly unscrupulous scoundrel, not 'dastard': cf. Lysist. 253: ἄμαχοι γυναῖκες καὶ μισαρά.

(3) While ὦ μισαρὸν ἦθος is open to these objections, ὦ μισαρὸν ἦθος, which, I believe, Sophocles wrote, is open to none, and μισαρὸν might easily have been changed to μισαρόν. μισαρὸν corresponds exactly to γυναικὸς ὕστερον, which Mr. Blaydes, rightly, in my opinion, explains as 'the slave of a woman.'

Ib. 789.

καὶ σ' οὐτ' ἀθανάτων φύξιμος οὐδεὶς
οὐθ' ἀμερίων ἐπ' ἀνθρώπων, ὃ δ' ἔχων μέμνηεν.

Both Blaydes and Jebb reject ἐπὶ here; and, indeed, it seems unexampled in this sense. Blaydes proposed οὐθ' ἀμερίων σέ γ' ἀνθρώπων, and this Jebb adopts. I should like to read ἐπανθρώσκονθ' after ἀμερίων: 'neither God nor mortal can escape thy spring.' The best use of ἡμέριοι, like ἐφημέριοι, was absolute, without ἄνθρωποι. ἐπανθρώσκειν is not found; but ἀναθρώσκειν, ἀνθρώσκειν, ἐπενθρώσκειν, occur. The metaphor in the individual word would be that of a wild beast springing on some large animal, like a deer or horse, which rushes along, maddened, as it tries to unseat its captor.

Ib. 672.

ἀναρχίας δὲ μείζον οὐκ ἔστιν κακόν·
αὕτη πόλεις ὀλλυσιν, ἥδ' ἀναστάτους
οἴκους τίθησιν· ἦδε σὺν μάχῃ δορὸς
τροπὰς καταρρήγνυσι·

Jebb adopts the conjecture συμμάχου δορός, and calls it a certain emendation. Neither Blaydes nor Campbell reads it, and I cannot see why anarchy should be said to break the ranks of allies into revolt. Anarchy breaks up any army, whether there are allies present or not. Creon is

preaching obedience to authority. The mention of allies has nothing to do with his subject. I suggest

ἦδε συμμιγῇ δορός
τροπὴν καταρρήγνυσι.

This breaks forces into confused, headlong rout.

Philoctetes, 782.

ἀλλὰ δέδοικ' ὦ παῖ μὴ μ' ἀτελὲς εὐχή.

I think the sudden pang felt by Philoctetes justifies the insertion of a dochmiac among trimeters; and, regarding the verse as dochmiac, I would write

ἀλλὰ δέδοικ' ὦ παῖ μὴ μ' ἀφέλῃ σ' εὐχή.

'I fear your prayer (if granted) will take you away from me.' Neoptolemus had prayed for a fair wind and prosperous voyage.

Ib. 757.

ΦΙ. μὴ με ταρβήσας προδῶς.
ἦκει γὰρ αὕτη διὰ χρόνου πλάνοις ἴσως
ὥς ἐξεπλήσθη. ΝΕ. ἰὼ ἰὼ δύστηνε σύ.

Is the hiatus after ἐξεπλήσθη defensible? And the sympathising cry of Neoptolemus seems to show that Philoctetes had uttered an exclamation of pain.

I propose:

ἦκει γὰρ αὕτη διὰ χρόνου πλάνης τις ὥς.
ὥς ἐξεπρήσθη. ΝΕ. ἰὼ ἰὼ δύστηνε σύ.

'This agony has come back after an interval like some intermittent fever. How I am burnt up!' 'Oh! Oh! unhappy man!' πλάνης τις ὥς has, I think, been proposed before. *πῖμπρασθαι* is used of inflammation after a snake's bite, Acts, 28. 6.

EURIPIDEA. *Troades*, 777.

κρύπτειτ' ἄθλιον δέμας
καὶ ῥίπτειτ' εἰς ναῦς.

For κρύπτειτ', which is inconsistent with the sequel, read
μάρπτειτ'.—Soph. *Trach.*, 776 :

μάρψας ποδὸς νιν,
ρίπτει πρὸς ἀμφίκλυστον ἐκ πόντου πέτραι.

Heracidae, 398.

καὶ τὰμὰ μὲν πάντ' ἄραρ' ἤδη καλῶς.

So B, corruptly. μέντοι πάντ' C, μέν νυν πάντ', Nauck.
I propose :

καὶ τὰμὰ μὲν παγέντ' ἄραρ' ἤδη καλῶς.

Ib. 479.

τῶν σῶν δ' ἀκούσας Ἰόλεως στεναγμάτων
ἐξῆλθον, οὐ ταχθεῖσα πρεσβεύειν γένους.

What ταχθεῖσα means I do not see. I could understand
τεχθεῖσα; although not the oldest, not *natu maxima*,
Macaria felt the call of duty to take an eldest's part.
Paley, reading the vulgate, properly remarks: 'The phrase
is remarkable, because the natural meaning of the words
(πρεσβεύειν γένους) is "to be the eldest of the family."' And,
in my opinion, the natural meaning is the meaning here.

Ib. 502.

ἐγὼ γὰρ αὐτῇ πρὶν κελευσθῆναι, γέρον,
θνήσκειν ἐτοίμη καὶ παρίστασθαι σφαγῇ.

Read σφαγεῖ. How a girl can stand beside her own
sacrifice is obscure: she can stand beside the sacrificer.

Ib. 559.

σοφῶς κελεύεις· μὴ τρέσης μιάσματος
τοῦ 'μοῦ μετασχεῖν, ἀλλ' ἐλευθέρως θάνω.

What is the meaning of ἐλευθέρως θάνω? It ought to mean 'I am ready to die freely, voluntarily.' But can the subjunctive have this force? Paley explains it as 'let me die,' defending it by ἐπίσχετ', αὐδὴν ἐκμάθω; but this is quite different; and the sense, 'let me die freely,' even if possible, is foreign to the context here. I suggest ἀλλ' ἐλευθερῶ σ' ἐγὼ: 'but I absolve you of all guilt'—ἐνθανεῖν occurs in the next line, and may have caused θάνω here, after ἐλευθερῶ and σ' had become incorporated into ἐλευθερώς. When Hippolytus is dying, Theseus asks him (*Hipp.* 1448) is he going to die, leaving him under the impiety of having caused his death, to which Hippolytus replies—

οὐ δῆτ', ἐπεὶ σε τοῦδ' ἐλευθερῶ φόνου.

I should have suggested θεῶ, 'look on at my sacrifice without fear,' but that this sense is opened in the next line.

Supplices, 138.

ΘΗ. τίν' εἰς ἔρωτα τῆσδε κηδείας μολών;

ΑΔ. Φοίβον μ' ὑπῆλθε δυστόπαστ' αἰνίσματα.

Nauck says, 'ὑπῆλθε suspectum'; I do not see why; but perhaps ὑπῆθε, 'fired me,' would be a little better.

Ib. 1194.

ἦν δ' ὄρκον ἐκλιπόντες ἔλθωσιν πόλιν,
κακῶς ὀλέσθαι πρόστρεπ' Ἀργείων χθονα,

and *Ibid.*, 1208—

φόβον γὰρ αὐτοῖς ἦν ποτ' ἔλθωσιν πόλιν
δειχθεῖσα θήσει καὶ κακὸν νόστον πάλιν.

There is nothing in the words ἔλθωσιν πόλιν which

denotes hostility, and such an idea is clearly demanded. Write ἔλϷωσιν for ἔλϷωσιν: 'if they break their oaths, and press our city hard,' 'besiege,' 'molest,' it; true εἰλλειν is an epic word, but that objection is not fatal.

Ib. 557.

γνόντας οὖν χρεὼν τάδε
ἀδικουμένους τε μέτρια μὴ θυμῷ φέρειν
ἀδικεῖν τε τοιαῦθ' οἷα μὴ βλάψει πόλιν.

The poet cautions us against cherishing resentment, remembering the mutability of human prosperity; and it is easy to see that πόλιν is meaningless. The true reading is πάλιν: remembering how it may at a future time be in our adversary's power to hurt us, we should beware of committing wrong of such extent as will one day bring injury on us in return (πάλιν).

Ib. 449.

πῶς οὖν ἔτ' ἂν γένοιτ' ἂν ἰσχυρὰ πόλις
ὅταν τις ὡς λειμῶνος ἥρινου στάχυν
τόλμας ἀφαιρῇ κάπολωτίζῃ νέους;

τόλμας is universally condemned. I propose to write the last two verses thus:

ὅταν τις ὡς λειμῶνος ἥρινου στάχυν
τίλας ἀφαιρῇ κάπολωτίζῃ νέους

τίλας from τίλλω, 'to pluck,' which is the verb used in N. T., Matt. 12. 1, ἤρξαντο τίλλειν στάχυν; and so Mark 2. 23, τίλλοντες τοὺς στάχυν; Luke 6. 1, ἐτίλλον τοὺς στάχυν. The contract στάχυν seems to have been an Attic form—Ar. *Eg.* 393: Νῦν δὲ τοὺς στάχυν ἐκείνους οὐς ἐκείθεν ἡγαγεν.

Ib. 1010.

καὶ μὴν ὄρῃς τὴνδ' ἧς ἐφέστηκας πέλας
πυρὰν Διὸς θησαυρόν, ἐνθ' ἔνεστι σὸς
πόσις δαμασθεὶς λαμπάσιν κεραυνίοις.

Evadne is addressed: the pyre is that of her husband, Capaneus. The only emendation of the second line recorded by Nauck is δύης θησαυρόν, a proposal of Marckland. The true reading I have no doubt is δρυὸς θήσαυρον. The pyre is called 'a store of oak.' Cf. Soph. *Trach.*, 765, of the pyre raised by Hercules:

ὅπως δὲ σεμνῶν ὀργίων ἔδαίετο
φλόξ αἵματηρὰ καπὸ πειρίας ΔΡΥΟC.

Euripides, *Cyclops*, 383:

ἀνέκασσε μὲν πῦρ πρῶτον, ὑψηλῆς ΔΡΥΟC
κορμούς πλατείας ἐσχάρας βαλὼν ἔπι.

Virg., *Aen.* 6. 215:

Principio pinguem taedis et ROBORE secto
Ingentem struxere pyram.

Iphig. in Aul. 250.

Μυκήνας δὲ τὰς Κυκλωπίας
παῖς Ἀτρέως ἔπεμπε ναυβάτας
ναῶν ἑκατὸν ἡθροῖσμένους,
σὺν δ' Ἀδραστος ἦν
ταγός, ὡς φίλος φίλῳ
τὰς φυγούσας μελαθρα,
βαρβάρων χάριν γάμων
πρᾶξιν Ἑλλὰς ὡς λάβοι.

Paley adopts the conjecture ἀδελφός for the corrupt Ἀδραστος, understanding ἀδελφός to be Menelaus. We should, however, understand Agamemnon to be still referred to, who accompanied (σὺν——ἦν) his men as a *fearless commander*, reading ἄτρεστος for Ἀδραστος. We have the same play on Ἀτρεύς and τρέω *infra*, 321: μῶν τρέσας οὐκ ἀνακαλύψω βλέφαρον, Ἀτρέως γεγώς; Agamemnon helped his brother, ὡς φίλος φίλῳ, as one friend might help another.

FRAGMENTA COMICORUM.

I.

There is a curious instance of misconception of an author's meaning in the explanations of a passage given by Stobaeus, *Flor.* 57. 7. A man is talking of a sterile field which he has the misfortune to own; he says that if he sows twenty bushels of corn the yield is only thirteen: of the remaining seven he remarks—

οἱ δ' ἔπρ' ἐπὶ Θήβας ἐστράτευσάν μοι δοκῶ.
τὸ τῶν γυναικῶν σχῆμα διατηρεῖ μόνον.

The meaning of the latter line being obviously this: 'like ladies, it attends only to appearances'; has a fine show of blade but no crop; τὸ τῶν γυναικῶν being a well-known idiom. So τὸ τῶν παίδων in Plato = 'like children.' Owing, however, to the proximity of σχῆμα the article seemed to be conjoined to it, and Meineke says, *Vera lectio adhuc latet*, while Grotius read σῆμα, with inferior MSS., and διατηρεῖν, and, strange to say with Dobree's approval, thought the tomb of Niobe's daughters was referred to, and that the line was a parody of some tragic poet, who had spoken of the seven against Thebes as buried near the seven daughters of Niobe!

II.

Dicaearchus has preserved some difficult lines from a comic poet, referring apparently to Rhodes; given in Meineke, 2. 746 (p. 1198, ed. min.). I only pretend to emend one line:

τὰ γὰρ Ἀλῖεια μεγάλην εἰ σχολὴν ἄγει
τὸ δ' ἄλιακὸν ἔτος με μαίνεσθαι ποιεῖ.

εἰς σχολὴν ἄγει should be written for εἰ σχολὴν ἄγει. Cf. Ar. *Ran.* πάνυ γὰρ ἐστ' ἤδη χολή, etc.

III.

A line of Diphilus, as quoted in the *Anthology*, runs thus, Mein. 4. 426 (p. 1094, ed. min.):

Τὸ μὲν Ἄργος ἵππος οἱ δ' ἐνοικούντες λύκοι.

For ἵππος Meineke reads ἱππών; Kock ἱππιον. But I do not think that there is any reference to the old equine glories of Argos, or that there is any compliment to that ancient town in the verse. I read ἵπνος, one meaning of which was *latrina*. A well-known Greek traveller informs me that Argos is an exceedingly dirty town. The Argive herald in Homer and in the *Heracidae* bears the offensive name of Copeus, which may not be a mere coincidence.

IV.

There is an uncomplimentary reference to the Corinthian people, quoted from Menander, Mein. 4. 282 (p. 1007, ed. min.):

Κορινθίῳ πίστευε καὶ μὴ χρῶ φίλῳ.

πίστευε is obviously corrupt, and probably πρόσπτυε should be restored.

V.

Μετὰ ταῦτα θύνων μεγαλόπλουτ' ἐπεισέπλει
ὑπογαστρι' ὀπτῶν αἶτε λιμνοσώματοι
Βοιώτῃαι παρήσαν ἐγγέλεις θεαί
τεῦτλ' ἀμπεχόμεναι.

So Athenaeus, VII. 300 e, describing the dressing of eels, quotes from Eubulus. For λιμνοσώματοι, λιχνοσώματοι, λεισώματοι, etc., have been conjectured: see Kock's ed.; but surely the fault is in the second half of the compound, and we should read λιμνοδώματοι: 'whose abode is in the lake.'

VI.

Philemon tells us (Mein. 4. 58, p. 859, ed. min.):

Κὰν μέχρη νεφέων τὴν ὄφρυν ἀνασπᾶσθαι
ὁ θάνατος αὐτὴν πᾶσαν ἐλκύσει κάτω.

Mr. Blaydes reminds me that ἔλξει is the Attic form; therefore I would write ἐκλύσει. λύειν, ἐκλύειν ὄφρυν, are common in Greek, as 'knitting,' and 'unknitting the brows' in English. κάτω is perhaps corrupt also, being induced by ἐλκύσει. It was probably supplied after the corruption.

VII.

Suidas, s. v., εὐρωτιῶν, quotes Menander thus: ὁ τῶν ἀστικῶν (βίος) εἰς πενίαν συνεχῶς ὑπὸ τῶν ποιητῶν τύπτεται καὶ ὀνειδίζεται ὥς φησι Μένανδρος—

εἰς τὰ καθαρὰ λιμὸς εἰσοικίζεται.

(Mein. 4. 294, p. 1015, ed. min.). We should surely read εἰς τὰκάθαρα, and probably λοιμός also = 'pestilence settles in unclean places,' an obvious truth.

VIII.

Δούρειον ἐπάγω χῆνα τῷ φύσῃματι.

So Athenaeus, 9, p. 383 f. (Mein. 4. 419, p. 1090, ed. min.), describes a sumptuous goose in the words of Diphilus. Kock seems to acquiesce in a curious explanation of Δούρειον, namely, that it means a goose stuffed with other animals, as the Wooden Horse was filled with warriors. Meineke had quoted Macrobius 2, p. 383: *Titius obiicit saeculo suo quod porcum Troianum mensis inferant: quem illi ideo sic vocabant, quasi aliis inclusis animalibus gravidum, ut ille Troianus equus gravidus armatis fuit.* But ingenious though this be, it does not suit τῷ φύσῃματι, and I suggest that δούρειον should be Δαρεῖον, 'as proud as king Darius.' Darius and Philip are mentioned in the *Aulularia* as proverbially grand.

IX.

ὀρώμεν ὀψωνοῦνθ' ἐκάστης ἡμέρας
οὐχὶ μετρίως βέλτιστέ σ' ἄλλ' ὑπερφάνως.
οὐκ ἔστιν ἰχθυηρὸν ὑπὸ σοῦ μεταλαβεῖν.
συνῆκας ἡμῶν εἰς τὰ λάχανα τὴν πόλιν.
περὶ τῶν σελίνων μαχόμεθ' ὥσπερ Ἴσθμίοις.

Athen. 6, p. 227 e. (Mein. 4. 389, p. 1073, ed. min.). A man is cautioned against expensive marketing, and so making things scarce and dear to other purchasers. Schweighäuser has changed *συνῆκας* to *συνῆχας*, and Meineke accepts this, while Kock reads *συνείρχας*. But *συνῆκας* is quite right; the sense is 'you set us fighting,' not simply, 'you bring us together'; and *committere*, 'to pit together,' is expressed by *συνιέναι* in Greek. We are reminded of *commissa auctio* in Juv. *Sat.* 7.

X.

Antiphanes is quoted by Athenaeus, 7 p. 303 f., to the following effect:—Mein. 3. 70, 71, p. 524, ed. min.:

A. τούτους φάγοις ἄν; B. τοὺς γὰρ ἄλλους νερόμικα
ἀνθρωποφάγους ἰχθῦς. K. τὸ δεῖνα δ' ἐσθίεις;
ταυτὶ κακόνωτα πλοῖα. Γ. Κωπᾶδας λέγεις.

The last line should, I think, be written thus:

ταῦτι μακρόνωτα. B. ποῖα; Γ. Κωπᾶδας λέγει.

'Do you eat what d'ye call 'em? those long-backed fellows.' 'What do you mean?' 'Oh! he means Copaic eels.'

PLAUTINA. *Asinaria*, 4. 1. 26.

Posca is 'liquor,' from the root of *poto*, as *esca* 'food,' from the root of *edo*. There is no doubt that it often meant a vinegary sort of wine, and that the line in the *Miles*, 3. 2.

24, *Alii ebrii sunt alii poscam potitant* is plausibly explained to mean 'Some slaves get drunk on wine; others get thin stuff to drink'; but I believe *posca* sometimes retained its original meaning, 'liquor' or 'wine,' without reference to its quality. It is probably the true reading in two passages of Plautus, where, however, it has been corrupted into *postea*:¹ in *Asinaria*, 4. 1. 26, the Parasite, reading the bond to Diabolus, recites the words:

Tecum una postea aequae pocla potitet,

where we should change *postea* to *poscae*,² 'Let her take her liquor with you, glass for glass'; and in *Menaechmi*, 3. 2. 31, where the parasite Peniculus, meeting the wrong Menaechmus, and mistaking him for his patron, thus accosts him:

Fecisti funus meo absente prandio.

An ausus facere, quod ego aequae heres eram?

MEN. S. Adulescens, quaeso, quid tibi mecum est rei,

Qui mihi maledicas, homini ignoto, insciens?

An tibi malam rem vis pro maledictis dari

Postea? PR. Eam quidem edepol te dedisse intellego.

I would give the whole line to Peniculus, and write:

PR. Poscae eam quidem edepol te dedisse intellego.

'I see that you have been punishing the liquor': *i. e.* you are evidently drunk, as you talk such nonsense to me. Even if we press the meaning of *posca* to be a cheap wine, it will suit this passage, for it was exactly the *posca* which mounted quickly to the head, if we remember Juvenal, *Sat. v.*, where the *vinum quod sucida nolit Lana pati*, the wine used for poultices, as *posca* was, turned the drinker into a maniac = *de conviva Corybanta videbis*: and

¹ In the passage in the *Miles poscam* is corrupted to *postquam* in B.

² I do not say *poscas*. This bond of

Diabolus is full of intentional hiatus, owing to the slow pronunciation of a person reading out.

remembering this passage I am not at all sure that the true interpretation of the passage in the *Miles* is not simply 'some are dead drunk (as Sceledrus was, fast asleep), others are boozing.' With the phrase *malam vim dare poscae*, compare *funus facere prandio* above: Horace's *nihilum nocuere lagenis*.

Cistellaria, 4. 1. 16.

Non ecastore ais a memoro.

So Ussing cites the MSS., and this clearly points to *falsa memoro*, *f* and *e*, *i* and *l*, being confounded times without number in Plautine MSS., not to *cassa memora*, the emendation of Camerarius, generally accepted.

Casina, 2. 5. 5.

Quid tu me vera libertate territas ?

uera B E, *hera* I, *vero*, Camerarius; but *uera* was certainly in the archetype. Read *sera libertate*. How *libertate* by itself can mean *libertate neganda* I do not see. We can easily imagine Cleostrata threatening Olympio, 'it will be late before you get your freedom.' [Cf. *Libertas quae sera tamen respexit inertem*.]

VIRGILIANA. *Aen.* 4. 371.

Quae quibus anteferam ? iam iam nec maxima Juno
Nec Saturnius haec oculis pater aspicit aequis.

I wish to propose a new interpretation of *quae quibus anteferam*, namely, 'Before whom can I lay these things ? It is no use my appealing to Juno or Jupiter.' The only thing that is an obstacle to this view is, of course, the con-

struction of *anteferam*, in this sense, with a dative; but there is nothing impossible in such a construction; *anleponere* takes a dative in the sense of placing before, and *anteferre* might take a dative in the sense of bearing and laying before. Had Virgil been writing prose he would have written *Quae ad quos deferam?* 'To whom can I complain of this?' Dido cannot find sympathy anywhere. Even heaven is unkind. So Antigone, helpless and forlorn, exclaims: τί χρὴ με τὴν δύστηνον εἰς θεοὺς ἔτι βλέπειν; τίν' αὐδ' ἀν' ἀνθρώπων; so Iolaus, in the *Heraclidae*, ποῖ τρεψόμεσθα; τίς γὰρ ἄστεπτος θεῶν;

Ib. 4. 436.

Extremam hanc oro veniam, miserere sororis
Quam mihi cum dederis cumulatam morte remittam.

As I do not understand this celebrated passage with any reading or interpretation yet proposed, perhaps I may be pardoned for suggesting, though with doubt and diffidence, which will probably be felt in a higher degree by my readers (if I have any), a conjectural emendation. Although the better MSS. give *dederit* and *cumulatam* or *cumulata*, yet Servius held the best reading was *dederis cumulatam*, and it is on this reading I found my conjecture. I propose:—

Quam mihi cum dederis, ululatum morte remittam.

'This is *the last* favour I shall ever ask (says Dido): give it to me, and I will excuse your raising the dirge at my death' (which is usually *the last* favour). Possibly Virgil's amanuensis accidentally omitted an *ul* in *ululatum*: and then Varius and Tucca, finding the truncated *ulatum*, completed the word to the best of their ability. *Remitto* never means 'to pay back': on the other hand, one of its most technical uses is 'to excuse,' 'to remit.' The senti-

ment is like that of Horace : *absint inani funere naeniae* : —*sepulcro mitte supervacuos honores*. *Ululatus*, at death, was the duty of the women : when Dido had stabbed herself to death, the house resounded *femineo ululatu*, Anna taking a leading part, as became her propinquity, as Juvenal tells us would have been the duty of Cassandra and Polyxena, had their sire, Priam, died before the Trojan war. Although I think *in* may easily have fallen out after *m*, yet *morte* simply may stand for ‘at my death.’

HORATIANUM. *Carm.* I. 12. 15, *seqq.*

Unde nil majus generatur ipso
Nec viget quicquam simile aut secundum :
Proximos illi tamen occupavit
 Pallas honores.
Proeliis audax, neque te silebo
Liber, et saevis inimica virgo
Beluis et te metuende certa
 Phoebe sagitta.

It is very strange that Bacchus's prowess in war is celebrated as the god's prominent characteristic. Stranger still if, removing the stop after *honores*, we place it after *audax*, and make Pallas the warlike divinity. Strange also, that on either of these suppositions Mars, the father of the Roman race, is left unnoticed. The fact is, in my opinion, that *proeliis audax* is Mars. The construction is either a strong ἀνὰ κοινού (*neque te*) *proeliis audax, neque te, Liber silebo* (Horace is fond of this figure), or else the expression *proeliis audax* is to be explained, as addresses to the gods often are, as a pregnant expression resting on an ellipse : god of battles (*I mention thy name*) nor, etc. This form of address is indeed usually followed, in Greek by γάρ,

in Latin by *nam*, or some such word; as, for instance, such invocations as Ἀχελψίου θύγατερ σὺ γὰρ ἐν σαῖς ποτε παγαῖς τὸ Διὸς βρέφος ἔλαβες: and Alma Venus (I address thee) per te quoniam genus omne animantum Concipitur visitque exortum lumina solis. But it is not necessary here, where Horace rushes along, *fertur*, though not *numeris lege solutis*, from one divinity to another, and the mere mention of the god's name is sufficient.

A. PALMER.

April, 1888.

MR. ARCHER-HIND'S 'TIMÆUS.'¹

MR. ARCHER-HIND'S *Timæus* is a most valuable help to the understanding of the philosophy of Plato. It consists of the text, an excellent and most readable translation, with an introduction and notes mainly metaphysical.

The peculiarity of Mr. Archer-Hind's view of the *Timæus* is, that that dialogue furnishes us with the master-key which alone enables us to enter into Plato's secret chambers; that the *Timæus*, and the *Timæus* alone, enables us to recognize Platonism as a complete and coherent scheme of Monistic Idealism, p. 2, and that, as Plato's system is distinctly a form of Pantheism, any attempt to separate therein the creator from the creation, except logically, must end in confusion and contradiction. (p. 40.)

The student of metaphysics is strongly advised to read Mr. Archer-Hind's book in connexion with Professor Jackson's papers on Plato's Theory of Ideas in the *Journal of Philology*, vols. x.-xv., which I hope will be republished in a separate form. They are a great boon to the student of Plato, and the student of Plato and the student of Philosophy are, in my opinion, convertible. Dr. Jackson's view—that in Plato's dialogue are to be found two well-defined phases of thought—has been adopted by Mr. Archer-Hind. 'Plato, in his later years,' says Dr. Jackson, 'regarded the universe as the eternal immutable thought of One infinite mind, this eternal immutable thought being localised in shifting space as the sensations of a plurality of finite minds.' (*J. P.*, vol. xv., p. 288.) With this proposition I agree in a

¹ London: Macmillan & Co.

certain sense, reserving the point as to 'later years,' and it is pleasanter in the first instance to dwell on points of agreement. In philosophy, as in other things, union is better than separation. Besides, as the difference will eventuate from the agreement, points of agreement for every reason ought to come first.

Mr. Archer-Hind's method of studying Platonism is the true one. No single dialogue contains Platonism whole, nor do all of them together, and yet we possess all Plato's dialogues, as, to suppose a missing dialogue, *The Philosopher* is to mistake in *prima digestionem* Plato's Philosophy as well as Plato's creed. 'Plato never,' says Mr. Archer-Hind, 'wrote a handbook of his own philosophy, nor will he do our thinking for us; he loves best to make us construct the edifice for ourselves from the materials with which he supplies us. And this we can only do by careful combination of his statements on the subject in hand, spread, it may be, over several dialogues, and, by sober interpretation of his figurative language, availing ourselves at the same time of whatever light we may be able to derive from ancient expositors of Plato, and chiefly from Aristotle.' (pp. 50-51.) This is, with the reasons for it, plainly stated in one of Plato's letters. The letters are considered genuine by critics of such opposite views as Grote and Cobet: but, be they written by whom they may, the reasons are weighty, especially at this very hour of this Golden Age of Cram.

οὐκ οὖν ἐμοί γε περὶ αὐτῶν ἔστι σύγγραμμα οὐδὲ μήποτε γένηται· ῥητὸν γὰρ οὐδαμῶς ἐστίν, ὥς ἀλλὰ μαθήματα, ἀλλ' ἐκ πολλῆς συνουσίας γιγνομένης περὶ τὸ πρᾶγμα αὐτὸ καὶ τοῦ συζῆν ἐξαίφνης, ὅλον ἀπὸ πυρὸς πηδήσαντος ἐξαφθὲν φῶς, ἐν τῇ ψυχῇ γενόμενον αὐτὸ ἑαυτὸ ἤδη τρέφει.—
Epist. III. 341 *cd*.

Again,

ἐνὶ δὲ λόγῳ τὸν μὴ ξυγγενῆ τοῦ πράγματος οὐτ' ἂν εὖμαθία ποιήσῃ ποτε οὔτε μνήμη.—*Ib.* 344*a*.

But there is a deeper reason; in Plato's system, God alone has complete knowledge; and His friends—*i. e.* philosophers—know more or less, according to their lights, that is in proportion as they can unsee the sensible, or see that their material surroundings have merely a momentary and fleeting semblance of that reality, to suggest which is their final cause.

Alles Vergänliche
Ist nur ein Gleichniss

is not merely, as Mr. A.-Hind suggests, the motto of the *Timæus*, but of Platonism. The Ideal World is changeless, but the way we view it is owing to our organism, manifold varying not merely from individual to individual, but from sense to sense, the eye being the best equipped for the quest of all our organs. Hence, then, each dialogue is strictly dominated by the purpose or purposes in hand, and is in fact 'a corner' of Platonism spied through a logical point; but we must bring our own glasses and adjust them to our medium. Or, if it be preferred, each dialogue is an anticlerical exercise in Metaphysics, if the spirit of Plato will allow a metaphor from the *novela* of the educationism of to-day.

This being so, the next point follows: each dialogue being dominated by its own special purpose, difference ceases to be contradiction—the stronghold of Grote and his followers. That this is so has been in many cases pointed out by Mr. Archer-Hind. But if this is so, why not apply the same principle to Dr. Jackson's view that Plato had two theories of ideas, an earlier and a later? Why oppose the *Timæus* to the *Republic*? A moralist might treat the human body in a different way to the physiologist, though the physiologist and moralist might agree on all points, or be one and the same person. England is not France, though there is room on the map for both. 'Plato,' says Mr. Archer-Hind, 'always confines himself to the limit of the subject in

hand. He is like a good general, who does not call upon his reserves till they are wanted,' p. 171, *note* 5—a most remarkable instance where the precise statement in 48e is contrasted with 28a, τότε μὲν γὰρ δύο εἶδη διειλόμεθα, νῦν δὲ τρίτον ἄλλο γένος ἡμῖν δηλωτέον. Τὰ μὲν γὰρ δύο ἱκανὰ ἦν ἐπὶ τοῖς ἔμπροσθεν λεχθεῖσιν, κ. τ. λ.—*Tim.* 48e. Here the premier word εἶδος is made yield to the all-gripping dialectic, and Mr. Archer-Hind's book is simply invaluable in pointing out how the two passages cohere, καλῶς καὶ Πλατωνίμως, καὶ μὴ βωμολόχως καὶ μὴ Περιπατητικῶς. The harmony of the *Dialogues* will be discussed anon.

If any of the academics who dissected the pumpkin stumbled over such easy ἀπορίαι as the psychology of the *Timæus* contrasted with that of the *Republic*, or, as the two souls of the *Laws*, it is not wonderful that they were puzzled by Plato's transcendental lecture on the Good. And we know from Aristotle that the majority of Plato's hearers were disappointed by his discourse on the Good, as the lecturer dwelt on Numbers, Geometry, Astronomy, and the Oneness of the Good. Why this abstractness?

There are two modes of treating the contents of consciousness—the order of time and the order of thought. Thus, we hear a knock, and afterwards a man comes in. In the other order, the man comes to the door before he knocks and before we see him. In philosophy, as the analysis of complete consciousness, the last is the more important order, and Plato's lectures dealt with philosophy. And Aristotle tells us that Plato used the terms *before* and *after* in relation to the order φύσει, that is in the real or objective order, as opposed to the order in which they reach us, *Metaph.* Δ xi. We may term the first, with Mr. Archer-Hind, the *logical* order, if we like, only that logic in English savours much of the subjective.

We are told also by Aristotle that certain persons compared the *Timæus* to a geometrical diagram. According

to Plato, the diagram was a figure presented to the senses which assisted us in approximating to the purely intelligible. The circle on the board was really not a true circle, but it helped us in our dealings with the true circle. Hence, if the *Timæus* be a metaphysical diagram, it will picture to our imagination the logical relation of pure concepts, and Simplicius identifies the 'certain persons' of Aristotle with Speusippus and Xenocrates, the two Scholarchs who immediately succeeded Plato. In our own literature, the *Fairy Queen* is, on the avowal of the author, a *διάγραμμα* of Aristotle's Twelve Virtues.

The *Timæus* thus is a *διάγραμμα* for the logical explanation of what we call Creation. Anyone who takes up Genesis will see the order of the development. In the beginning, God created, and there was morning and evening the first day. The Demiurge in the *Timæus* compounds the elements, and proceeds to construct the soul, of the world out of proportional data. The Greek metaphor is taken from the mixing of wine and water in definite proportions for a symposion. So far the earlier academics, Speusippus and Xenocrates, are justified in treating the *Timæus* as a *διάγραμμα*. What we have then to do is to translate the order of Creation into the order of Thought. Xenocrates, the most thorough of the disciples of Plato, gave an account of the *γένεσις* of the Ideas, as it would have been if the Ideas admitted of *γένεσις*. In a word, *γένεσις* deals with the *Vorstellung*, while the order in logic deals with the *Begriff*.

The absolute God is *τὰγαθὸν*; his form in Aristotelian language is *τὸ ἐν*, while *τὸ ἀγαθὸν* is the matter. In cases like these Latin is misleading, but English is ludicrous. Imagine a treatise of Algebra alluding to the *x* as the beginning and end of all calculation. But Plato, taking Mathematics as the type of our highest knowledge, touching on the one side sensible images—the diagram—and

on the other the intelligible concept, described the intelligible world in the language of quantity based on τὸ ἕν. Hence the intellectual aspect of Deity is unity τὸ ἕν.

But as the absolute God is definite as τὸ ἕν, the immediate *contre-coup* is τὸ ἄπειρον, i. e. absolutely unquantified indefiniteness. As indefiniteness *per se* is not an object to thought, it may be construed to thought with reference to τὸ ἕν and to quantity as it drifts to the two ultima of mass, as the indefinitely big and the indefinitely little—in our abstract language, indefinite addibility, and indefinite divisibility—a two-fold notion, like the numerator and denominator of the fraction, each implying the other. But each quantum has a kind of unity; and so the indefinite—τὸ ἄπειρον—in reference to unity, but not actually unified, is ἡ ἀόριστος δυνάς. Next, the dyad in actual relation to the one yields three notions, the τὸ ἕν, τὸ μέγα, and τὸ μικρόν; and the relation being fully completed, we have four notions, τὸ μέγα with its τὸ ἕν, and τὸ μικρόν with its τὸ ἕν. Or, to put it in another way—τὸ ἄπειρον is divisible, which yields *three* notions, divisor and dividend not actually divided; but having regard to division and to τὸ ἄπειρον actually divided, we find the dividend divided as two moieties, and so four notions. In Greek it is obvious:—τὸ δύαζον; τὸ δυαστόν; τὸ δυαζόμενον; τὸ δεδυασμένον. This, in the language of quantity, gives the eidetic Numbers of Plato, the absolute τὰ γὰθὸν having passed through τὸ ἕν into the attitude of relativity before, as Hegel says, the creation of a single finite spirit. In scholastic language, it is Creation *a parte rei*. In the language of dimension, it is a geometrical solid, a solid of three dimensions considered, like a schema of Kant, as an object of the intelligence, but not to be depicted to fancy or sense, either as the block of granite or the figure on a black-board. If this is so, we can see why the Platonists represented their God as the Eternal Geometer,

in the strictest sense of the word. Aristotle, it may be remarked, expressly asserts the harmony of the *Timæus* with the lectures of Plato with regard to the *αὐτοζῶον*—the intelligible schema of the sensible universe, *de Anima* I. ii. 7. If this is so, the *Timæus*, in its account of creation, agrees with the position of Mathematics in the *Sixth Republic*. Aristotle never wavers in his account of the place Plato gave to Mathematics.

The Decad—or sum of the Monads of the One, the Dyad, the Triad, and the Tetrad—is thus the schema of the creation, whether considered as objects to us or as the mind in us which cognises them, the cognitive power varying from its culmination in the friend of God, the philosopher, down to the faintest gleam of sentient animalism. Of course Darwinism proceeds up from the lowest to the highest, but the myth in the *Politicus* shows beyond doubt that Plato saw that the road up and down was one and the same; while in the *Republic*, the purport of which is ethical and dominated by the Good, the development is proportioned to moral excellence.

The notices of Plato by Aristotle ought to be studied with the utmost attention, all the more so as Aristotle is not a metaphysician in the sense that Plato is. But this renders his testimony all the better, like that of the Phoenician describing the sun below the line. Aristotle, in *de Anima* I. 2, 7, says that Plato made the *αὐτὸ τὸ ζῶον ἐξ αὐτῆς τῆς τοῦ ἐνὸς ιδέας καὶ τοῦ πρώτου μήκους καὶ πλάτους καὶ βάθους, τὰ δ' ἄλλα ὁμοιοτρόπως*. Now *αὐτὸ τὸ ζῶον* is the sensible cosmos, and *τὰ ἄλλα* its contents: the moments are Point, Line, Surface, Solid; and in *A. I. 7*, Plato, he tells us, used to call *ἡ στιγμή ἀρχὴ γραμμῆς*. Now *ἀρχή*, as the reader of the *Phædrus* knew, is not an empirical antecedent; it must be something both ultimate and permanent. Hence the ultimate and permanent *στιγμή* must clearly be *τὸ ἐν* in its first relation to *τὸ ἄπειρον*. And this

view is confirmed by the statements of Aristotle, *Phys.* I. vi. 6, *τινές* referring to Plato, and of Xenocrates fr. 1., *Mullach*, vol. III. We must always bear in mind, that the One, the Two, the Three, and the Four are not mere symbols, but are the intelligible schemata of the Good: the Good containing not merely purpose, but Beauty, that is, the supreme object of all the emotional and æsthetic acting faculties, in sympathy with the active framework of thought. To sum up:—The absolute God is *τάγαθόν* and *τὸ ἐν*; *τάγαθόν* and *τὸ ἐν* passing into an attitude of relativity are *ἀριθμοί* on the side of the absolute, and on the side of completed relativity are *ἰδέαι*, while completed relativity involves as a condition *ψυχή*, which, regarding *ἰδέα* objectively, is *λόγος*, and regarding *ἰδέα* subjectively, is *αἴσθησις*. Hence *ψυχὴ* is to *ἰδέα*, as *ἰδέα* is to *τὸ ἐν*, and so the only *ἰδέα* is the *αὐτοζῶον*, though, of course, we may by abstraction speak of fractions of the *αὐτοζῶον* as *ἰδέαι* or *εἶδη*. The ideas are products, as Aristotle says, of the factors in the Platonic sense *τὸ ἐν* and *τὸ ἄπειρον*, while the Numbers are the Idea formulated according to the progression of its logical moments. The One bisects *τὸ ἄπειρον*, and the bisection quantifies each section. Creation is differentiation.

How many Ideas are there? In one sense, one only; the *αὐτοζῶον*—God in relativity. Of this the parts coexist, and hence their relations, though logically subsequent to the *relata*, coexist of necessity. As in Clarke's argument, things exist, and therefore their relations exist. The peculiarity of Professor Jackson, who is followed by Mr. Archer-Hind, is the view that Plato, in his maturer years, held that there were no ideas of Relations or of artificial things like the bed of the *Tenth Republic*, of Negations, and of things that perish. The passages cited in support of this from Aristotle are—(a) *κατὰ τε γὰρ τοὺς λόγους τοὺς ἐκ τῶν ἐπιστημῶν, εἶδη ἔσται πάντων ὄσων ἐπιστῆμαι εἰσι, καὶ κατὰ τὸ ἐν ἐπὶ πολλῶν καὶ τῶν ἀποφάσεων· κατὰ δὲ τὸ νοεῖν τι φθαρέντος,*

τῶν φθαρτῶν· φάντασμα γάρ τι τούτων ἐστίν. "Ἐτι δὲ οἱ ἀκριβέστατοι τῶν λόγων, οἱ μὲν τῶν πρὸς τι ποιοῦσιν ιδέας ὧν οὐ φαμέν εἶναι γένος καθ' αὐτό οἱ δὲ τὸν τρίτον ἄνθρωπον λεγοῦσιν. A 990 b 12; (b) καίτοι τῶν εἰδῶν ὄντων, ὅμως οὐ γίγνεται τὰ μετέχοντα, ἂν μὴ ᾗ τὸ κινῆσον. Καὶ πολλὰ γίγνεται, ἕτερα, οἷον οἰκία, καὶ δακτύλιος, ὧν οὐ φαμέν εἶδη εἶναι. 991 b 6. In the first passage Aristotle explains himself—there can be no γένος καθ' αὐτό of τῶν πρὸς τι. In the order of logic, relation is subsequent to the *relata* of which it is the outcome; but the relation is as real as its *relata*, while the *relata* last, and in the αὐτοζῶον all *relata* are eternal. In the *Phædo*, the object of which is to prove the eternity of thought, relations are ideas, that is, the first glimpse of the idea we catch is that of relation, and so of the fingers in the *Republic*. The *Republic* deals with things in subordination to τὰγαθόν, and so there is an idea of σκευαστά, of useful articles like a bed. Of course the bed is not γένος καθ' αὐτό, but its ideal unity consists in its utility and beauty. Negations, as shown in the *Sophistes*, are subsequent, and so not γένη καθ' αὐτά, but τὸ μὴ εἶναι is real, and therefore has an ιδέα. All τὰ μὴ ὄντα are present to the divine mind, as everything is what it is, and not another thing. In the *Philebus*, the relation of pleasure to τὰγαθόν is discussed; but as pleasure is of τὸ ἄπειρον, τὸ πέρας and τὸ ἄπειρον are dwelt on to the exclusion of other details. In fact Plato is the Kant, as well as the Hegel, of ancient thought: he does for the object what Kant does for the subject: to think requires categories, &c., says Kant; to think requires ideas, says Plato; both stand and fall by the same test: a postage stamp without categories would refute Kant; two sticks without an idea would refute Plato, and so of the hair, mud and filth of the *Parmenides*. All are parts of the αὐτοζῶον; each has its own idea, or ideas, fractions, μόρια, of the one whole.

How many Numbers are there? Strictly speaking, the

first numbers are the Three and the Four, as the One and the Dyad are not Numbers in the Greek sense. Number—*ἀριθμὸς*—or system of Monads, is plural. The one is not Number, but *ἀρχὴ ἀριθμοῦ*; the *ἀόριστος δυάς* is not Number, for it is out of all relation to *τὸ ἐν*; but as the Three and the Four presuppose as postulates of their completed form *τὸ ἐν* and the *ἀόριστος δυάς*, we get ten Monads. *A parte rei*, there is no Number after the Four, as the Tetrad completes the *αὐτοζῶον*, or God in relativity. But as all the relations of these First Numbers, though logically subsequent to the Three and the Four, are modes of these First Numbers, all the relations of numbers are equally eternal. In modern language, God in relativity is quality differentiated by quantity.

As to the creative power delegated by the Demiurge to the *θεοὶ θεῶν*, *Tim.* 41*d*, it amounts to this in the logical order that the two *relata ταὐτὸν* and *θάτερον* are opposite but in relation; but *ταὐτὸν* has the primacy according to the same order, difference being based on specific identity: e. g. *a* is not *b*, because *a* is *a*, while *b* is *b*. This being so, every relation between the two *relata*, *ταὐτὸν* and *θάτερον*, must consist of more or less reference to either relatum, or to put it in coarser language, every relation between the spiritual and the material must be more or less spiritual and more or less material, according to the point on which the relation hinges. But, as in the logical diagram of creation, the process is from *ταὐτὸν* to *θάτερον*; and, as *ταὐτὸν* has the primacy, creation or differentiation must be stated as a process of deterioration. The second mixture is (*Tim.* 41*a*) 'seconds and thirds' as to pureness. That is, the *θεοὶ θεῶν* are the *ἰδέαι* in relation to us: we see sensible particulars like philosophers in relation to ideas; that is *the second* destilment; or we view them like common sense people or materialists or sensualists, as complete and separate realities, that is *the third* mixture. The *θεοὶ*

θεῶν are the ἰδέαι which are logically subsequent to the moments of the Numbers; they are θεοὶ because they are eternal; and they are θεῶν because they are the outcome of the eternals. Mr. Archer-Hind, *note* 18, pp. 157-8, objects to the plural θεῶν as without propriety or meaning if applied to the Demiurges; but the αὐτοζῶον, or God in relativity, is both one and plural, and is plural for the purposes of differentiation or creation with which the *Timæus* deals.

Mr. Archer-Hind has not applied to his materials the all potent criterion preserved by Aristotle, when he says, 'Ideas can no more exist without particulars, than particulars can exist without the ideas,' p. 34; and again, 'I must guard against being supposed to mean that the pluralised thought is more real than the primal unity: only that the existence of both is essential to the reality of either,' *note*, p. 40. Now if we take the order in time, nothing has any reality; there is only the fleeting impression of the instant like the snow-flake on the river. But in the order φύσει, τὰ πολλὰ presuppose τὸ ἓν and not *vice versa*, the γένεσις presupposes οὐσία, and not *vice versa*: see *Met.* Δ xi. τὰ δὲ κατὰ φύσιν [πρότερα καὶ ὕστερα λεγεται] ὅσα ἐνδέχεται εἶναι ἄνευ ἄλλων ἐκεῖνα δὲ ἄνευ ἐκείνων μὴ. This is the principle used by M. Cousin in his criticism of Locke, a work of great merit in one way: it accustomed its reader to the logical order of ideas.

In the *Republic*, v. 476 *cd*, Plato states expressly that the particulars are not αὐτὸ, nor αὐτὸ the particulars. In the same way, γένεσις is not οὐσία, nor οὐσία γένεσις. This is clear from the proof in the *Phædrus*—ἀρχή is not γένεσις. But applying Aristotle's canon, γένεσις involves ἀρχή, but ἀρχή does not involve γένεσις. Where there is γένεσις there must be ἀρχή, but where there is ἀρχή there need not be γένεσις. Or, in modern language, the relative implies the absolute, but the absolute does not imply the relative. To use Mill's apt illustration, God may be only known as

feeding the ravens, but this does not imply that He only exists that the ravens may be fed. Hence, I cannot accept Mr. Archer-Hind's view, that Plato is a Pantheist.

There is another reason: if contingency be necessary, then contingency becomes necessity, or, in the language of the *Timæus*, τὰντὸν becomes θάρεπον, Q. A. E. So Plato disposes of Protagoras: if everything be relative, then there must be something which is not relative, viz. the law that everything is relative; or to put it in Hegel's language, the necessity of externality, which is exactly Plato's θάρεπον, is external; the necessity of τὰντὸν is internal. If θάρεπον had internal necessity, it would, *eo ipso*, be τὰντὸν. Plato's Idealism involves negation, as in the *Sophistes* and *Parmenides*, and the negation will always prevent Idealism from merging in Pantheism, and the same negation is the bulwark of individuality.

Mr. Archer-Hind justly regards space as subjective, and so likewise time; they are secondary aspects of θάρεπον, pp. 44-46, and *note* 9, pp. 182-184.

In justice to myself, I cannot refrain from pointing out that I maintained the subjectivity of the Platonic space in an essay published in 1866.¹ In that essay the points the writer sought to establish were two: 'The first is, that the Idea and Platonism are identical; that the Idea, consequently, cannot be removed from the organic whole of Plato's Philosophy without the total destruction of the system. The second is, that Plato rejects the existence of matter, as an objective *tertium quid*, between the psychic principle and the Idea. The second proposition is strictly a consequence of the first; but its prominence in modern speculation may, perhaps, justify its separate position.'

¹ *The Platonic Idea*, by Thomas Maguire, A. M., of Trinity College, Dublin, and of Lincoln's Inn, Barrister-at-Law: University Press. Longmans. London, 1866.

p. vi. As part of the general plan, the following account was given of the *Timæus*¹:—

'Aristotle points out a discrepancy between the *Timæus* and the lectures of Plato. The lectures of Plato appear to have been a systematic course, which he was in the habit of delivering. Some of them, at least, were of a highly abstruse and technical character. Various editions were published by several of Plato's most distinguished pupils, Aristotle amongst the rest. Leaving out of count Aristotle's lofty personal character, it is obvious that any misstatements would have been made in the face of numerous fellow-pupils and rival editors. But anyone really acquainted with Aristotle's works sees that it is almost an insult to his memory, to declare him incapable of misrepresentation. Aristotle's testimony, therefore, may be admitted without scruple.

'The discrepancy between the lectures and the *Timæus* is, that in the former the vehicle of Participation was said to be The Indefinite—The Great, and The Small; while in the *Timæus* that function is assigned to space. The fact of *prima facie* discrepancy may be admitted at once. It may be remarked, also, that Aristotle, here as elsewhere, specially contrasts the *Timæus* with the general body of Platonic doctrine. The *Timæus*, consequently, is the only witness on Aristotle's side. But, as the subjectivity of extension is a vital point in the views advocated in this Essay, it remains to be considered whether the discrepancy is ultimate or not.

'We must remember the historical position of Plato's philosophy. Plato was an eclectic. His object was to elaborate a system of ethics by an amalgamation of the current forms of speculation. He wished to reconcile the absolute unity of Parmenides with the relativity of Heraclitus. The medium of reconciliation was the Numbers of Pythagoras.

'The various constituents of Platonism are represented in the

¹ As Prof. Zeller has pointed out, I made a strange mistake with regard to τὸ δὲ μέγ' ἐν γῇ μήτε που κατ' οὐρανὸν οὐδὲν εἶναι, *Tim.* 52b. Τὸ δὲ I referred

to space *πρὸς αὐτὸ γένος*; in that case εἶναι should be *ἔν* or *ἐστίν*. It does not, however, affect the view of the subjectivity of space.

Dialogues by a dramatic contrivance, which has perhaps a nucleus of historical truth. The negative or critical side in ethical argument is generally conducted by Socrates, while the constructive part is intrusted to a disciple of a kindred school. But the critical side of speculation is not always negative in its results. The refutation of extreme sensualism necessitates the position of something supersensuous; and ethical problems do not of necessity sound the depths of the metaphysical gulf. Justice and Prudence, Temperance and Fortitude, Pleasure and Pain, are far more tangible objects than Existence and Unity. Besides, the purely ethical problems are comparatively few in number, when contrasted with the infinite varieties of metaphysical construction. At all events, the credit of the Platonic Socrates as an ethical expositor is not involved in any metaphysical position, save the affirmation of something at once supersensuous and objective, and his reputation is thereby saved whole. As a further instance of the same contrivance, the delineation of the spiritual world is left to an Eleatic, because Plato adopted as the foundation of his system The One of Parmenides, who is always spoken of with profound respect. But, as the Numbers of Pythagoras were employed by Plato to connect the intelligible One with the sensible Many, the exposition of the relation between the two elements is with great propriety put into the mouth of the Pythagorean Timæus. We have seen that it is one of the first principles of Platonism that elements in and during their composition may be found unaltered; and this notion Plato, with his usual artistic skill, has embodied in the rôles of his various characters. The *Timæus* of the Dialogue, accordingly, must be held to convey Plato's own opinions in Pythagorean language. Certain differences, however, between the Numbers of Pythagoras and the Idea of Plato must be kept in view, if we wish to render the sermon of *Timæus* into its genuine Platonic equivalents. But, as the complexion of the *Timæus* is highly mythical, Plato's conception of a myth requires some attention. Like everything in Plato, his conception of the myth is sharp and clear, and is the rigorous result of his peculiar opinions.

‘It may be recollected that, according to Plato, every complex verbal symbol had its mental counterpart. A myth, consequently,

is the duplicate of a mental state, and that state may be described somewhat as follows :—

‘ Objectively, there is either existence, or there is not; objectively, there can be no compromise between the presence and the absence of reality. Subjectively, it is quite another thing. The judgment of the mind may, with reference to reality, be either true or false. Relatively to the object of knowledge, the cognitive principle may exist in three possible conditions. In the first, it is in full possession of objective reality—neither subject nor object exercising any mutual alternative influence. The direct antithesis of this is, when the cognitive principle is wholly wrapped up in the contemplation of one of its own creations, which it mistakes for objectivity. In the former state, the object is wholly objective; in the latter, wholly subjective. But between these two extremes a mean state is possible. The object of cognition may be partly objective, and partly subjective. We may discern substantial reality looming through the haze. To see the objective, as it is in its entirety, is (according to Plato), for reasons which we shall see, denied to man in his present state. To mistake the subjective modification for the objective reality is the error of the majority of the sons of men. To be convinced that the subjective modification is not the objective reality is the mean state of the Philosopher—the searcher for truth. The first state is the beatific condition of the perfect soul, and is termed by Plato divine. The second is compared by Plato to a dream, in which all sense of the outer world is lost. The intermediate condition is denoted by that term which signifies the state between sleep and waking, in which there is a slight sense of external things.

‘ Now, language is the reflex of thought; and thought, in Plato’s opinion, is perpetually disturbed by the interruptions of the senses. Hence, the Philosopher, in endeavouring to describe his day-dreams, must employ the language of what may be termed the coma of the noetic faculty. In other words, he is obliged to describe that which is wholly nontemporal and unextended in phraseology modelled on a basis of Time and Space.

‘ All sensation, according to Plato, is particular; there is no abstract sensation; every sensation must be a specific affection of a special organ. It must be, for example, colour; and colour must

be green or blue, &c. The mimetic artist is, consequently, confined to particulars; sculptors and painters, more so, and poets less. The locks of the Phidian Zeus must have lain in some particular curves on the immortal brow. The artist in words has greater freedom. No sculptor could embody the wrathful God descending Olympus in the gloom of outraged deity, nor communicate the awe breathed by the mere instruments of the coming vengeance, even before the deathless arm was exerted in destruction. No painter could set forth Achilles, as he shone in the heaven-sent glory on the brink of the bloody trench. And, though one man has by words done both, yet the conceptions actually employed are strictly sensuous details, which leave much to the imagination of the reader. The subjects, besides, are in reality sensuous. But in depicting what is wholly supersensuous in the colours of sense, we must have recourse either to extreme generality, and consequent faintness; or we may fill in the spiritual outlines with a profusion of details, which will show at once that the picture is meant to be symbolical. Plato has adopted the latter course; he elaborates his spiritual cartoons with almost wearisome minuteness. But, whatever may be thought of their merit as works of art, their significance as sensuous embodiments of spiritual reality is pretty evident. And nothing can well be harder than to turn Plato's precaution against misconception into an argument against his philosophical consistency. The spiritual world can only be depicted to the imagination in the special colours of sense, and the speciality of the colouring Plato has pushed to an extreme. Bearing this in mind, a Platonic myth may be defined to be a description of supersensuous reality in the concrete language of the sensuous impression. To use the Platonic metaphor, a myth is an account of the purely spiritual state of waking in the imagery of dreams, when the higher faculty is in total abeyance. In a word, the Platonic myth is parabolic, and not argumentative; and the myth differs from the parable only in the minute precision with which the smallest details are analogues of the unseen.

'The mythical setting of the *Timæus* is to the following effect:—The Demiurge, or architectonic God, puts together the universe by joining three elements, viz:—the Noetic, the Sensible, and Space. These elements existed prior to the work of the Demiurge. The

motive of the Architect was His own goodness, which He wished to impart to other intelligences. In pursuance of this end, and to give inferior beings an analogue or symbol of His own imperturbed eternity, the Demiurge contrived the celestial phenomena, in order that they might suggest the notion time. And, having committed the lower offices of elaboration to the mundane gods, the Architect rested from His work.

'The differences between the Pythagorean Number and the Platonic Idea must be now adverted to. The numbers of Pythagoras were the parts which made up the sensible extended universe, and the universe was surrounded by infinite space. The numbers possessed extension, and bore somewhat the same relation to the Platonic Idea, that the modern conception of a force bears to its formula. The Number connoted extension. The Number was a mode of extension, while the Idea was pure intelligible essence, which existed aloof from any sensuous relation, even local position. This distinction being premised, the *Timæus* reads somewhat as follows:—

'The motive of perfect and autonomous unity is goodness—the ultimate ethical aspect of personality. But the Perfect Personality is not a nebulous benevolence, which radiates its blessings indiscriminately on every side. Supreme Intelligence is its organon; and its work—the act of Divine Volition—shapes itself in harmony with Supreme Intelligence. But intelligence, though desirable on its own account—as an end—is also desirable as a step to something further—as a means. Intelligence, therefore, *quâ* means, is, in the order of thought, subsequent to perfection, which is exclusively an end. Now, the law of intelligence—the numerical index of the Idea—the numerator of the fraction—though logically subsequent to perfection, yet, *quâ* bare possibility, is prior to the undetermined activity, for the limitation of which it lays down the formula. An act of Divine volition is the means which brings the two extremes—Divine differentiating Intelligence, and Divine undifferentiated Substance—into harmony, and that harmony is the Idea. But, though the means of combination is subsequent in the order of thought to the things combined, the means is a *sine quâ non*. The Divine Efficient Will is the means of the combination of the Divine elements, and the Demiurge of the *Timæus* is that Will personified.

The Demiurge—the architectonic God—is properly described, in the imagery of sense, as building the universe out of pre-existing elements, because the act of Divine personality is logically subsequent to its logical prerequisites—the intelligible or noetic formula, and the unexerted personal force. The Demiurge is, consequently, Perfect Personality, apprehended in its Epiphany. The Demiurge is, therefore, distinct from the Good, the super-essential and absolute God. In other words, the Demiurge is an anthropomorphic conception of the Deity, in the act of submitting Himself to relation. And the Demiurge is said with strict dramatic propriety to build upon infinite space the fabric of the cosmical universe, because, the numbers of Pythagoras being modes of extension, extension as a pre-existing *tertium quid* was a necessity in the Pythagorean conception of the relation between the noetic and the sensible. According to the Pythagoreans, the universe was surrounded by infinite space. But Plato in the *Timæus*, as we shall see, expressly confines the functions of the figment space, to express two facts relating to the phenomenal scheme, viz:—the *quasi*-identity of each portion of a phenomenal series, and the real dependence of the entire sensible scheme upon its noetic basis. The *Timæus*, therefore, while it preserves dramatic and philosophical consistency, by admitting Space into a Pythagorean exposition of creation, in reality lays down the essential subjectivity of that notion. And we know from Aristotle that certain persons maintained the symbolism of the *Timæus*; that is, its covert noetic significance; and compared its functions to a mathematical diagram, which assists the apprehension of a theorem, while it very rudely denotes scientific exactness. These persons are said by Simplicius to be Speusippus and Xenocrates. Of these, Plato himself appointed his nephew Speusippus to succeed him as lecturer in the school. Speusippus had strong Pythagorean affinities, and was, therefore, not likely to underrate similar leanings in his immortal relative. And Xenocrates, who succeeded Speusippus, when the latter's health gave way, is pronounced by the Scholiast to be the most staunch of Plato's immediate disciples. But, even without the express testimony of Simplicius, we might have inferred that the persons alluded to by Aristotle were the immediate successors of Plato in the school. We have, accordingly, contemporary

testimony of the highest kind of the symbolism of the *Timæus*,
pp. 84-93.

I gave another argument to show the Pythagoreanism of the Sermon, viz., the structure of the Four Solids: the Platonic solids were five; see *Epinomis*, 984, B. C. and *Xenocrates*, *fr.* 70, *Mullach*, vol. iii. In each case the solids are schemata for the diagram; there is no vacuum, because where τὸ ἐν is not, τὸ ἄπειρον is. They divide the world. Prof. Jackson thinks that Aristotle alludes to the solids of the *Timæus*, A 992 b 13, where he says that τὰ μετὰ τοὺς ἀριθμοὺς μήκη καὶ ἐπίπεδα καὶ στέρεα are plainly a fourth grade τέταρτον ἄλλο φαίνεται τοῦτό τι γένος. *J. P.* xiii. p. 31. Not so; the logical moments of the αὐτοζῶον, taken as moments of distance, give us the elements of the geometrical schema as before. The geometrical schema is logically posterior to the logical, but it is another aspect of it: the geometrical schema is the face presented to us.

Professor Jackson and Mr. Archer-Hind restrict ideas in 'mature Platonism' to kinds naturally determined, and Mr. Archer-Hind is inclined to go a step further, and confine the ideas to classes of living things, p. 34. In support of the first restriction, Aristotle is cited ὅτι εἶδη ἐστὶν ὅποσα φύσει, and he instances πῦρ σάρξ κεφαλή, Δ iii., 1070 b 19. This is bringing Natural History into Metaphysics. In the *Cratylus*, Plato gives an εἶδος to τὰ παρὰ φύσιν, such as a monster τέρας, 394 d. We may recollect the use Locke makes of monsters and changelings against *genera* and *species*. Of course the idea of a kind would be higher than that of a bed, meaning by higher, higher in the logical order.

Mr. Archer-Hind does not give Socrates his due. Socrates was the father of Western Metaphysics. He introduced definition and induction, the two ἀρχαὶ ἐπιστήμης, *Aristotle*, M. 4. 'Επιστήμη gave to the Socratic Greek the notion of stopping the πάντα ρεῖν of Heraclitus, *Crat.* 437 a,

Aristotle *de An.* I. iii. 7, *Probl.* xxx. 14, and *Analyt. Post.* II. xv. 6. The latter passage is most graphic, and probably reminded the disciples of their Master in the rout at Delium. But to suppose the flux stopped by a concept in the English sense is more than the broom and the tide, for the broom stops some of the tide. 'Επάγειν may have been a military term *to bring up* ταῦτα ἤδη μοι δοκεῖς πυκνότερα ἐπάγειν, *Cratylus* 120 *d*, as ἐπάγομαι is political; ἀρχή everywhere is the ne plus ultra.

The *Timæus* describes differentiation in the direction of θάτερον. Mr. Archer-Hind regards Plato's view in the *Timæus* as to woman's position as a concession to Athenian prejudice. Surely a physiologist might hold that physiologically woman was arrested development, while he agreed with Lord Tennyson that morally she is not undeveloped man. Of course development is the converse to Plato's downward movement. But it is the same thing, the road up and the road down.

Again, Mr. Archer-Hind opposes the view of the *Timæus*, 92 *b*, that all orders of beings pass one into the other—what may be called the transmigration of orders—to the view of eternal punishment in the *Republic*, *Phaedo*, *Gorgias*. But the *Timæus* is a diagram, a myth; while in the *Republic* and *Gorgias* there are argumentative passages for the eternity of punishment: compare *Gorgias*, 481 *a-b*, with the official passage in *Rep.* x., 610 *d*. In the *Phaedo*, as man is good in proportion to his idealism, so he is bad in proportion to his empiricism.

As to minor points, I annex two notes in opposition to Mr. Archer-Hind's views.

35a. τῆς ἀμερίστου καὶ αἰὲ κατὰ ταῦτα ἐχούσης οὐσίας καὶ τῆς αὐτῆς περὶ τὰ σώματα γιγνομένης μεριστῆς τρίτον ἐξ ἀμφοῖν ἐν μέσῳ ξυνεκράσατο οὐσίας εἶδος, τῆς τε ταυτοῦ φύσεως αὐτῆς περὶ καὶ τῆς θατέρου, καὶ κατὰ ταῦτα ξυνέστησεν ἐν μέσῳ τοῦ τε ἀμεροῦς αὐτῶν καὶ τοῦ κατὰ τὰ σώματα μεριστοῦ· καὶ τρία λαβὼν αὐτὰ ὄντα

συνεκεράσατο εἰς μίαν πάντα ἰδέαν, τὴν θατέρου φύσιν δύσμικτον οὖσαν εἰς ταὐτὸν ξυναρμόττων βίῃ. First, as to the Greek. I retain αὖ περὶ after φύσεως consensu codicum, with Stallbaum and the Zürich edition. It adds considerably to the sense. There is no chemical *confusio* in Plato, no composition where the effect is new and unlike its factors. By the words αὖ περὶ after οὐσίας Plato reminds us that the mixture depends on its two elements which are there unaltered, περὶ with the genitive meaning *depending on*, as περὶ σπέλους, ε 500, hanging round and from the rim of the cave; περὶ γᾶς of the sparrows, Sapph. 1, 10, the genitive constituting and defining the range; περὶ θεῶν beliefs constituted and defined by the Divine Nature, Xen. Mem. I. i. 20. Here the mixture depends on its two factors. In the logical order the relation depends on the two *referenda*, and out of these three, two *referenda* and one *relatio*, he makes one new result, the *relatio* of the *relata*. That is, he blends *sein* and *θάτερον* into *wesen*, and *wesen* completed contains *sein* *θάτερον* and their relation, *wesen*. Dr. Jackson's φύσεως for the first οὐσίας is ingenious, but φύσις is rather the element in relation, *relatum* rather than *referendum*. Anastrophe of περὶ with the genitive is not uncommon in the *Timæus*, e. g., ἐκαστου περὶ, 49e, γενέσεως περὶ, 53e, and many others. The mixture may be termed 'thought-stuff,' the result being more or less spiritual according to the proportion of the ingredients.

52. ὥς εἰκόνι μὲν ἔπειπερ οὐδ' αὐτὸ τοῦτο ἐφ' ᾧ γέγονεν ἑαυτῆς ἔστιν ἑτέρου δέ τινος αἰὲ φέρεται φάντασμα, διὰ ταῦτα ἐν ἑτέρῳ προσήκει τιτὶ γέγενεσθαι

I take αὐτὸ τοῦτο ἐφ' ᾧ γέγονεν to be the accusative of respect, *since not even* in its *raison d'être* *does it belong to itself, but floats along the phantom of another distinct thing*. αὐτὸ τοῦτο as to the very point attached to which it has come into being—its meaning, sc., εἰκόνι εἶναι. A likeness has no meaning except to suggest the original.

Mr. Archer-Hind attaches too much importance to the metaphor *μίμησις*. Aristotle constantly uses *μίθεξις* of Plato, but gives *μίμησις* to the Pythagoreans, and Timæus—the man—was a Pythagorean. The union of the extended with the non-extended cannot be depicted to imagination. They exist *χωρίς*, and no words can paint the latter. The Heaven of Milton and the Paradise of Dante, and the New Jerusalem of Revelations, are, in one way, as sensuous as any *spectacle* in the Alhambra. All in Plato is consistent; the highest outcome of thought—the *αὐροζῶον*—consists of *στοιχεῖα*; the lowest outcome of thought—the word—consists of *στοιχεῖα*—the ultimate in analysis, *Cratylus*, 422 *b*. The 'crude realism' of the Republic contains the locus classicus for the subjective origin of plurality, 476 *a*: and if plurality be 'objectivo—objective' the *Phædo* is in vain. The correspondence between the extended and non-extended is not, as Berkeley supposed it, arbitrary, but one of symbolism or analogy. As Mr. Archer-Hind well puts it, 'the material universe is, as it were, a luminous symbol-embroidered veil, which hangs for ever between finite existences and the infinite, as a consequence of the evolution of the one out of the other. And none but the highest of finite intelligences may lift a corner of this veil and behold aught that is behind it.' True, but as now we may know that the infinite must be, so the veil may become more and more luminous, until the whole material cosmos becomes as purely symbolical as the signs of that science which Plato held divine:

This use may lie in blood and breath,
Which else were fruitless of their due,
Had man to learn himself anew,
Beyond the second birth of Death.

T. MAGUIRE.

May, 1888.

MR. NEWMAN'S 'POLITICS' OF ARISTOTLE.*

THIS is by far the most elaborate and important edition of the *Politics* as yet essayed in England. The great compass and minute detail of the Introduction, which extends to nearly 600 pages, show on what a scale the work is planned, and accordingly we are prepared to find, and gladly welcome, more than 400 pages of comment on the first two books, beyond which the edition has not as yet advanced. The work is plainly a labour of love, and the result of many years' study on the part of a scholar of high attainments and very wide reading. Ranging from Homer through the classics to Diogenes Laertius and Chrysostom, and from thence through the Schoolmen to Bacon Hobbes and Mill, the Introduction passes over no source of instruction, containing even many references to the recent daily and weekly press; while the critical and explanatory notes embrace not only all the editions, but many scattered comments and notices in British and foreign reviews. Here, however, the editor has formidable rivals even in England. In the department of illustration, especially from modern history and literature, it would be hard to surpass the edition of Dr. Jowett, reviewed in HERMATHENA No. XII., and we anticipate in Dr. Jowett's

* *The Politics of Aristotle, with an Introduction, Two Prefatory Essays, and Notes Critical and Explanatory.* By W. L. Newman, M.A., Fellow of Balliol College, and formerly Reader in Ancient History in the University of

Oxford. Vol. I. (pp. xx, 580) *Introduction to the Politics.* Vol. II. (pp. lxxvii, 419) *Prefatory Essays, Books I. and II., Text and Notes.* Oxford: Clarendon Press, 1887. 28 s.

Part II. of vol ii. introductory matter of corresponding excellence. What makes this edition a far more important undertaking than Dr. Jowett's is the fact that Mr. N. does not adopt the text of any precedent editor, but gives a text of his own, founded on views about the relative value of the two families of mss, to which his own studies have led him. Let us first take a broad view of his leading principles, which may afterwards be examined more in detail as applied to certain passages in Books I. and II. Dr. Jowett in his Preface, p. v, refers to 'Immanuel Bekker, the father of modern textual criticism, who has not left much to be improved in the text of Aristotle.' Accordingly, he bases his text mainly on Bekker's 1st ed. of 1832. Mr. Newman, on the contrary, regards Susemihl's 1st ed. of 1872 'as making an epoch' in the study of the *Politics*. But as between the two families of mss distinguished by Sus., he dissents from Sus., preferring the second family to the first; and claims that his opinion (founded on an elaborate comparison of the two families, vol. II. pp. LV-LXV) has received confirmation from the discovery, or rediscovery, in 1886 in the Vatican library, of twelve palimpsest leaves, forming part of a Vatican ms of Aristides (probably of the 10th century), and containing fragmentary portions of *Ar. Pol.* III. and VI., which are said to agree with the second family in sixty-two cases, and with the first in only twenty-seven. It may be well to remind readers of HERMATHENA what the chief representatives of the two families are:—

I.

(1) Ms *codex Mediolanensis ordinis superioris*, in the Ambrosian library at Milan, belonging to 2nd half of 15th century.

(2) P¹, of the Bibliothèque Nationale at Paris, belonging to end of 15th or beginning of 16th century. These codices were not used by Bekker.

(3) Γ , the supposed original—but there may have been more than one original—of the *Vetus Interpretatio* of William de Moerbeke, a Flemish Dominican who died not long after 1280, and who, therefore, must have used a *codex* older than any known ms of the *Politics* except the Vatican fragments.

II.

(1) P^a , Bibl. Nat. Par., 14th century.

(2) P^a , Bibl. Nat. Par., beginning of 14th century, and therefore the earliest complete ms of the *Politics* known to scholars.

(3) P^a , the less good variety of 2nd family, including O^1 (ms in Corpus Christi College, Oxford) collated by Newman.*

Mr. Newman's remarks on the general character of these sources of the text are definite and minute:—

If we except the Vatican fragments, the mss of the *Politics* are of a late date—later than the text translated by the *Vetus Interpres*, which was itself apparently not very early. They are evidently full of the faults commonly found in mss. The scribes did their work mechanically for the most part—often without a thought of the meaning of what they were writing—though here and there we seem to detect efforts to emend the text, especially in the case of puzzling words or passages. The mss often incorporate glosses with the text; they often omit whole clauses, especially clauses intervening between repetitions of the same word; still oftener they omit one or more words; they are often led astray by homoeoteleuton; their errors are particularly frequent in relation to certain words; they repeat words from the preceding line; they are apt to place contiguous words in the same case; sometimes they seem to admit two alternative readings together into the text—sometimes we notice that clauses are transposed. To say

* With Sus. and Newman Π = consent of Aldine (1498, based on a ms of 2nd family) with all extant mss; Π^1 = consent of extant mss of 1st family; Π^2 = consent of Ald. and rest of 2nd family; Π^3 = consent of Ald. and P^a .

that they have these defects is, however, only to say that they share the common lot of manuscripts. Their lateness has probably added to their imperfections. We note, for instance, that many of the variations which we observe in them are variations in the terminations of words; and these may often have arisen from the misreading or miswriting of contractions, which were used with increasing frequency after the eleventh century. Vol. II. p. l.

Occasionally all the manuscripts, in addition to the text used by the *Vetus Interpres*, offer a reading almost or quite certainly wrong, but they seem on the whole to preserve with considerable fidelity the idiosyncrasies of Aristotle's peculiar and highly characteristic style. In a large number of passages earlier critics have condemned readings which a closer and more sympathetic study of Aristotle's use of language has proved to be undoubtedly correct. Often and often the manuscripts have retained little idiosyncrasies of style, which less mechanical copyists, or copyists more ready to insist on the ordinary rules of Greek writing, might well have smoothed away. Peculiarities in the order of words, occasional omissions of a word or words, *constructions ad sensum*, carelessnesses, or roughness of style, and even positively bad writing, are faithfully reproduced. *Ib.* p. li.

Both families agree in the order in which they arrange the books. In both the first four chapters of the Sixth Book are little better than a chaos. This last defect, it is true, may have existed in the work as Ar. left it. All the mss and the *vetus versio* also have the obvious blunder ἐπίσκεψιν in II. 12. 1274 b 7: all read ἐκ τοῦ τετάρτου τῶν τετάρτων in II. 6. 1266 a 18. *Ib.* p. liv.

Editors of the *Politics* seem to have no option but to make their text more or less a composite text. *Ib.* p. liv.

So far as to varieties of reading—but mss are liable to still graver defects—to interpolation, chasms in the text, displacement of words clauses and paragraphs, and the like. How has it fared with the *Politics* in respect of these matters? As to interpolation, I have elsewhere pointed to more than one passage in which it may be reasonably suspected. Susemihl, as is well known, holds

that chasms in the text of the *Politics* occur not unfrequently, and that in many cases the transposition of clauses and paragraphs is called for. There would be nothing surprising in this. We occasionally find sentences obviously displaced in manuscripts of the *Politics* (e.g. in 1264 b 3, 1287 b 18, 1290 a 32), and here and there we trace a minute but indubitable chasm (there is a chasm of this kind in the better mss in 1285 a 19). *Id.* p. lxvi.

These observations on the character of the diplomatic evidence for the text of the *Politics* would certainly not prepare one to look in his criticism for an undue adherence to ms authority. Yet such, we must own, seems to be the chief defect of his work. He does not apply the principles which he lays down. For instance, we turn to the notes on the first of the 'obviously displaced' sentences' referred to above (1264 b 3, the only one of the three comprised in the present instalment of the commentary), and there we find the text of the mss defended, and the transposition of the 'obviously displaced' sentences condemned. This tendency on the part of the editor will be further exemplified. Meantime, however, it is but fair to remember that ultra-conservatism has the sanction of Susemihl's own example. It seems to us that his 2nd ed. of 1879 represents the best text of the *Politics* ever written or printed. In his 3rd ed. of 1882, of which he writes, Preface xii, that it is *Bekkerianis multo similior quam duae priores*, he relegates to the notes the admirably convincing emendations by himself and others which in Sus.³ stood in the text, and prints (generally condemning) the Bekker reading, which the Oxford editors nearly always accept and defend. In this way Sus.³ has dealt with the passage 1260 a 9-24, to which we pointed in HERM. xii. p. 24 as an example of a passage corrected with convincing sagacity by Sus. He prints the Bekker reading accepted by Dr. J. and Mr. N., giving his own and Thurot's corrections in the note. Similarly, he shrinks from a necessary

transposition in 1264 b 30-40, but indicates an unaltered view by bracketing the intervening words which interrupt the construction. Dr. J. and Mr. N. follow Bekker. Sus.³ even gives *καὶ τούτων ὁ δῆμος* 1273 a 9, the reading which Dr. J. and Mr. N. accept and defend, instead of *τούτων καὶ ὁ δῆμος*, which he now only records in his foot-note, but which stood in the text in Sus.³ And in 1273 b 15, *κάλλιον ἕκαστον ἀποτελεῖται τῶν αὐτῶν*, Sus.³ contents himself with '*τῶν αὐτῶν haud integra esse monuit Sus.*', and does not even mention his correction, *κάλλιον ἕκαστον ἀποτελεῖται < ἢ ὑπὸ > τῶν αὐτῶν*, though the *ab eisdem* of William of Moerbeke affords a strong presumption that *ὑπὸ τῶν αὐτῶν* was the reading of Γ. If it is bad criticism here to accept the reading of the Vet. Int. against the mss, how are we justified in inferring *εἰς ὁ τῆς*, which no ed. rejects as a correction of *ισότης*, from his *unus qui unius* against all the mss in 1260 b 41? For Mr. Newman's answer to this question, which seems to us inconclusive, see his critical notes on 1273 b 15 and 1253 a 10. He says: 'We have already seen that he (Vet. Int.) occasionally inserts prepositions without authority, and here he had a special motive for doing so; for, as Busse p. 21 points out, he seems to have taken *τῶν αὐτῶν* with *ἀποτελεῖται*.' Of course he did, if he found *ὑπὸ* in Γ. If in certain mistranslations Vet. Int. has used a prep., is it a just inference that when his version exhibits a prep. it is presumably erroneous? No: when in mistranslating he uses a prep., it is not because he has a tendency to insert prepositions wrongly, but because he has taken a wrong view of the meaning, as he often does,* and the expression of this wrong view happens to demand a prep. in his version. It will be perceived, that in all the cases quoted on 1253 a 10 the prep. had its origin in a misconception of

* e.g. in 1274 a 34 *διαμίσθσας recodatus* is probably a mistranslation of

διαμίσθσας, a word misread for *διαμίσθσας*.

the meaning of the passage, not in a tendency to insert prepositions wrongly. We have quoted Mr. Newman's just observation, that 'editors of the *Politics* seem to have no option but to make their text a composite text.' What we want, therefore, is an editor with the highest judgment, the widest knowledge of Aristotle's writings, and the most powerful grasp of his train of thought and insight into his style. In a word, mss failing, we want skilled emendation. Sus. brought these qualities to bear on Ar. in the highest degree, and gave us in Sus.² the best text we shall ever have. But Busse and Dittenberger persuaded him that he attached too much importance to the Vet. Int. and to Γ as inferred from it, which, according to Dittenberger, 'has from a diplomatic point of view no weight whatever as opposed to the concurrence of all other mss of both families.' Hence we find in Sus.³ the mechanical errors, and (worse still) the crude conjectures of scribes infinitely inferior to Sus. in sagacity; and we have to look to the notes to find how he has corrected them. Dr. J. and Mr. N. follow the concurrence of mss. Even in the celebrated passage about Plato's complicated method of choosing the Council, 1266 a 15, where Sus.³ still gives in the text the corrections of his two first edd., Mr. N. follows the mss, bracketing only τοῦ τετάρτου; Dr. J. does the same, bracketing only τῶν τετάρτων. The course taken by recent criticism illustrates one of Aristotle's rules for attaining the mean, ἀποχωρεῖν τοῦ μᾶλλον ἐναντίου. Bekker having completely neglected P¹ and Γ, Susemihl's recoil carried him perhaps too far from Bekker's method, and now Busse and Dittenberger seem to be dragging him too near it again. Without free emendation and transposition we can have no readable text. It is hardly too bold to say that Ar. could not have written 1266 a 15 as it stands in the texts of the Oxford editions. Mr. N. seems to follow most closely the method of Busse and Dittenberger. To

emendation as used by Sus., Bernays, Thurot, Spengel, and others he seems to be too much opposed. On 1261 b 2 we read: 'Sus. reads ἀνομολους for δ' ὡς ὁμολους, and this conjecture may be right, but of course it is only a conjecture.' This is his attitude towards nearly all conjectures. With his views about the character of the mss, how can he be sure that the ms reading is not the conjecture of a scribe with not the hundredth part of Susemihl's intelligence?

We cannot therefore but think that Mr. N., though fully alive to the defects of the mss, has allowed an undue reverence for their tradition to mar an achievement which his great learning, industry, and literary ability placed well within his reach. In justification, however, of his conservatism, it should be observed that Mr. N. by no means favours the theory that our *Politics* may be merely notes for lectures. Such a theory (which has been erroneously ascribed to him) would of course be absurdly incompatible with his rigid adherence to the mss. He observes that, though ancient writers speak of the treatise as a course of lectures, ἀκροάσεις, yet they speak of these lectures as *written* by Ar., not compiled from notes. He allows, however, that Ar. 'may have left his ms in pieces, and the *disiecta* (? disiecti) *membra* may not have been put together aright'—an admission which seems inconsistent with his great reluctance to transpose.

I have dwelt at length on the questions which concern the criticism of the *Politics*, because this is the most important, and in England hitherto the most neglected, part of the work of the editors of Ar. The body of illustrative and exegetic comment already amassed by Sus. and Dr. J. leaves little to be desired. But Mr. N. has succeeded in adding very largely to the already abundant harvest. It would be an endless task to point to all the ingenious remarks, made by Mr. N. himself, or quoted by him from others, on minute characteristics of the style of Ar. Such

are his use of *μὲν* in apodosis; of *μὲν οὖν* introducing an inference from, or comment on, what has just been said, yet not connected with the main argument (might we not say pointing to a foot-note?); of *δοι* *acerbius dictum*, 'some we wot of who'; and the distinction between the use of *Σωκράτης* and *ὁ Σωκράτης*—the former being the historical Socrates, the latter Socrates as one of the *dramatis personae* in Plato's *Republic*. We may, however, direct the attention of our readers to a few comments among many of great interest and importance, especially noting places where a happy illustration from Ar. himself clears up a difficulty :—

1254 a 31, καὶ τοῦτ' ἐκ τῆς ἀπάσης φύσεως ἐννέπρχει τοῖς ἐμφύχοις, 'and this (ruling and being ruled) comes to things possessed of life *from nature as a whole*.' He quotes a very apt parallel for the use of *ἐκ* from *De part An.* I. 1. 641 b 14, αἰτία τοιαύτη ἣν ἔχομεν ἐκ τοῦ παντός. We have τὴν ὅλην φύσιν in 1267 b 28; and ἐν ἀπάσῃ τῇ φύσει, *de An.* 430 a 10.

1254 a 33, καὶ γὰρ ἐν τοῖς μὴ μετέχουσι ζωῆς ἐστὶ τις ἀρχή, οἷον ἀρμονίας, 'z. B. in der musikalischen Harmonie' Bernays; 'wie z. B. (die des Grundtons) in einer Tonart' Sus.³; the latter suggests to read ἐν ἀρμονίᾳ; 'and certainly,' writes Mr. N., 'if the word is used in this sense the gen. seems strange, and in need of confirmation from parallel passages.' Bonitz groups this passage with *Phys.* I. 5, 188 b 12–16, where ἀρμονία is used in a sense opposed to ἀναρμοστία; the meaning would thus be 'a rule as of order and system.' Mr. N. thinks that Ar. may have had in his mind the Pythagorean tenet referred to in *Metaph. A.* 5, 986 a 2, τὸν ὅλον οὐρανὸν ἀρμονίαν εἶναι καὶ ἀριθμόν. This use of the gen. is common enough in the plur., e.g. ὁμοίως δὲ καὶ τῶν ἀνθρώπων, 'similarly in the case of men,' 1256 a 29; οὕτω καὶ τῶν οἰκονομικῶν, 1253 b 27; καὶ τῶν κινήσεων ἄρα ὡσαύτως, *Phys.* 8. 8. 263 a 1.

1261 a 9, καὶ δι' ἣν αἰτίαν φησὶ δεῖν νομοθετηθῆναι τὸν τρόπον τοῦτον ὁ Σωκράτης οὐ φαίνεται συμβαῖνον ἐκ τῶν λόγων. The last words Mr. N. well explains 'evidently does not result' comparing

1266 a 5 οὐδ' ἔχουσα φαίνεται. Dr. J. renders 'does not appear to be established.'

1262 a 1, ἔτι οὕτως ἕκαστος ἑμὸς λέγει τὸν εὖ πράττοντα τῶν πολιτῶν ἢ κακῶς ὁπόστος τυγχάνει τὸν ἀριθμὸν ὧν οἶον ἑμὸς ἢ τοῦ δέινος, 'further upon this principle everyone will call another "mine" or "not mine,"' according as he is prosperous, or the reverse; however small a fraction he may be of the whole number, he will say of every individual 'such an one is mine,' 'such an one is his,' Dr. J. Mr. N. does not translate the passage, but takes the view which seems to us to be right, and which may be thus expressed: 'With a degree of interest proportioned to the size of the community in which he forms one he will apply the word *mine* to each of the citizens, in prosperity or adversity,' calling the one 'mine,' the other 'so and so's.'

1264 b 18, ἀδύνατον δὲ εὐδαιμονεῖν ὅλην μὴ τῶν πλείστων ἢ μὴ πάντων μερῶν ἢ τινῶν ἐχόντων τὴν εὐδαιμονίαν. The order of πλείστων . . . πάντων . . . τινῶν is very unnatural, and the repetition of μὴ is strange. Emendation has been resorted to; but Mr. N. has apt parallels for both usages; cp. λέγω δὲ ἃ οἱ πολλοὶ φοβούνται ἢ οἱ πάντες, Magn. Mor. I. 20, 1290 b 19; so συμβαίνει καὶ ἐνδέχεται, 1330 b 37; for μὴ cp. Plat. Laws, 766 A μὴ ἱκανῶς δὲ ἢ μὴ καλῶς τραπεύειν. A note like this, in our opinion, puts in a very strong light the editor's ability as a commentator, and his complete equipment for his very arduous task.

1270 b 11, ἐν τοῖς Ἀνδρίοις, 'in the Andros business.' He suggests that the events of the year 333 are referred to. His note here affords a good specimen of the sterling value of the commentary as a contribution to history:—

'In that year the Persian fleet under Pharnabazus and Autophrades advanced from Chios first to Andros and then to Siphnos (nearer to Laconia), with the object of bringing about a rising in Greece against Macedon, and thus effecting a diversion in favour of Persia at the critical moment when Alexander was commonly thought to be "caught and cooped up in Cilicia" (Grote, Hist. of Greece, 12. 157 n.). We have, indeed, no record of any negotiations between the Ephors and the Persian admirals while the fleet

was at Andros, though we know from Diodorus (17. 29) that the Lacedaemonians were already on the side of Persia, and that Memnon had won over many of the Greeks by means of bribes; but at Siphnos King Agis made his appearance in a single trireme, and commenced negotiations for a subsidy and for the despatch of a fleet and an army to his aid in the war which he was contemplating with Macedon. The news of Issus, however, arrived in the midst of these communications and nipped the project in the bud (see A. Schäfer, Demosthenes und seine Zeit, 3. 1. 163, who refers to Arrian 2. 13. 4 *sq.*: Curt. 4. 1. 37). If, as is probable, the Ephors sent Agis on this errand, Aristotle may well have thought that they came near to ruining their country. Τὴν πόλιν, 13, in any case probably means the Lacedaemonian State, not Andros, for the fact that the corruptness of the Ephors nearly ruined Andros would not be to the point: Aristotle has to prove that it was perilous to their own State. If events of 333 B.C. are really referred to, the circumstance would be interesting, because it would show that this passage was added to, if not written, subsequently to that date.'

1272 b 8, πάντων δὲ φαυλότατον τὸ τῆς ἀκοσμίας τῶν δυνατῶν, ἣν καθιστᾶσι πολλάκις ὅταν μὴ δίκας βούλωνται δοῦναι. 'The way the great men have of declaring an abeyance of the magistracy of the Cosmi.' 'Ἀκοσμία is formed on the model of ἀναρχία, the abeyance of the Archonship, Xen. Hell. II. 3. 1. . . . We find a reference to δυνατοί in Crete in the account of Ephorus ap. Strab., p. 483: τὰς δ' ἀγέλας συνάγουσιν οἱ ἐπιφανέστατοι τῶν παιδῶν καὶ δυνατώτατοι. Cretan methods remind us of the *liberum veto* of Poland. They far transcend the turbulence of mediaeval Genoa.'

1273 b 5. Here Mr. N. rightly (but perhaps not quite consistently) gives ἀριστ' ἄρχειν with Spengel and Sus. against ἀρισταρχεῖν of II and Bekker. The mss, especially those of the 2nd family, show a tendency to avoid *hiatus*. L. S. should expunge from their Lexicon the word ἀρισταρχεῖν, which could only mean, 'to be an Aristarchus.' The same lexicon should take notice of the fact pointed out by Mr. N. on 1256 a 6, that ἀνδριαντοποιός properly means a worker in *bronze*, cp. Eth. Nic. 1141 a 10, Φειδίαν λιθουργὸν σοφὸν καὶ Πολύκλειτον ἀνδριαντοποιόν; also that αἵρεσις, *ib.* 26, means

simply 'taking' or 'getting,' not 'choice'; and that in 1256 b 21, ἀτελής means not *incomplete* or *purposeless*, but 'lacking an end' (τέλος or οὐ ἕνεκα).

I have reserved to the end the celebrated slavery passage 1255 a 3. This is Mr. N.'s view of it:—

The following summary will explain the way in which I incline to interpret the much-disputed passage which follows. The view that slavery is contrary to nature is true *τρόπον τινά*—*i. e.* if limited to the enslavement of those who are slaves only by convention. For in fact there are such slaves: the law by which captives of war are accounted the slaves of the victors is nothing but a convention. (Aristotle does not necessarily imply that this was the only way in which slaves by convention came into being. They might evidently come into being in other ways—through descent, through debt, through sale by parents, and the like. Into these minutiae he does not enter.) This provision (he proceeds) is dealt with by many who concern themselves with the study of laws, just as any peccant public adviser might be dealt with—they impeach it for unconstitutionality; they exclaim against the idea that anyone who may be overpowered by superior force is to be the slave of the person who happens to possess that superior force. Some are against the law, others are for it, and even accomplished men take different sides. (It appears to me that the πολλοὶ τῶν ἐν τοῖς νόμοις who are here represented as objecting to slavery based on a mere superiority in might must be distinguished from the authorities mentioned in 1253 b 20, as holding that *all* slavery is conventional, and contrary to nature. The πολλοὶ τῶν ἐν τοῖς νόμοις do not seem to have objected to slavery based on a superiority of excellence as distinguished from a mere superiority of might. Hence they probably did not object to the enslavement of barbarians in war by Greeks: we see, indeed, that not all the defenders of the law were prepared to defend its application to Greeks. In c. 2. 1252 b 9 the barbarian and the slave, not the conquered person and the slave, are said to be identified by the poets.) Now what is it that alone makes this conflict of view possible? It is that the two contentions '*overlap*' in a common principle accepted by both, which affords them a common standing-ground, relates them to each

other, and limits their antagonism. They both in fact appeal to the common principle that 'Force is not without Virtue.' Thus they differ only on the question what is just in this matter, not as to the relation between Force and Virtue. The one side pleads that, as Force implies Virtue, Force has a right to enslave: the other side pleads that as Virtue goes with Force and Virtue conciliates good-will, good-will will exist between those who are rightfully masters and slaves. Thus the one side rests just slavery on good-will between master and slave, and condemns slavery resulting from war, when good-will is absent, while the other side rests just slavery simply on the presence of superior Force. (We are not told that those who held slavery resulting from war to be unjust in the absence of good-will between the enslaver and the enslaved also held that good-will must necessarily be absent in all cases of enslavement through war. Their contention rather was that it was not safe to make Force of one, unaccompanied by good-will, the test of just slavery.)

This conflict of opinion is, as has been said, evidently due to the fact that both parties make an appeal to the common principle that 'Force is not without Virtue,' for suppose that they gave up this common standing-ground, ceased to shelter their claims under those of Virtue, and thus came to stand apart in unqualified antagonism, then *the other line of argument* (ἄτεροι λόγοι) on which they must necessarily fall back—the contention that superiority in virtue confers no claim to rule—is so wholly devoid of weight and plausibility, that no conflict would arise. (Those who connect the right to enslave with superior force, and those who connect it with the existence of mutual good-will between master and slave, are regarded as having two lines of argument open to them: either they may derive the claims of force and good-will to be the justifying ground of slavery from the claims of Virtue, and thus shelter themselves under the latter, or they may impugn the claims of Virtue; but if they impugn them, their own contentions lose all weight, and cease to produce any serious debate.)

We see then that the solid element in this pair of contending views, if we take them in the form which they assume when they possess any weight at all, is to be found in the principle that superiority in virtue confers the right to rule, and to rule as a

master rules. We shall arrive at exactly the same result if we examine another view on the subject.

We have hitherto had to do with those who discuss the law in question on its merits; but there are those who support slavery arising through war on the broad ground that it is authorized by a law, and that that which is so authorized is *ipso facto* just. But a law, though a justifying ground, is not everything in this matter. For the war may be an unjust one, and either on this ground or on grounds personal to himself, the man enslaved through war may be undeserving of his fate: injustices of this kind the law will not avail to make just. In fact, these inquirers admit as much themselves, and contradict their own plea. For they say that Greeks are not to be enslaved, but only barbarians, since barbarians are slaves everywhere (πανταχοῦ δοῦλοι) and Greeks nowhere slaves. They make the same distinction in reference to nobility. They say that Greek nobility is nobility everywhere, and in an absolute sense, but barbarian nobility is only local. Thus they hold that there are such beings as πανταχοῦ, ἀπλῶς δοῦλοι—πανταχοῦ ἀπλῶς ἐλεύθεροι and εὐγενεῖς: Theodectes, in fact, connects the latter quality with descent from the gods. What else then do they do but mark off slave and free by a reference to virtue and its opposite? For descent from the good is, they imply, equivalent to goodness, and so it generally is, though not invariably, since Nature sometimes misses her aim.

διαστάντων . . . χωρὶς τούτων τῶν λόγων he renders 'severed from the ground which they occupy in common, and set opposite the one to the other' (for χωρὶς seems to mean, 'apart from each other,' not 'apart from other arguments') or, in other words, no longer 'overlapping' (ἐπαλλαττόντων). He adds, 'cf., περὶ μικροβιότητος, I. 464 b 27, where κεχώρισται is used in opposition to ἐπαλλάττει, and Pol. VIII. (VI.) 7. 1321 a 15, where διαστῶσι is opposed to συνδύζεσθαι, a word used to explain ἐπαλλάττειν in Pol. VIII. (VI.) I., 1317 a 1.'

I will now give a few comments of my own on this passage, concluding with the interpretation of Dr. Maguire. His view, as grounding the whole passage on the language of *logic*, certainly possesses the merit of complete originality.

The comments which I have entered in my copy are these:—

It must be granted that the superior in excellence should rule; the only question is *why*? Wherein lies the right to rule? Is it in *εὐνοια*, because the superior in excellence will be more likely to carry out humanitarian views (or, because there is a mutual consent to the relation)? Or is it in the principle 'the weakest goes to the wall' τὸ τὸν κρείττονα ἄρχειν δεῖν? The question is confused by the fact that, from one point of view, superior *strength* implies superior *excellence*. That superior *excellence* gives no claim to authority cannot be maintained. Hence, that the superior in ἀρετῇ should rule is certain, and is admitted. The antinomies are:—

(1) Some slavery is right and κατὰ φύσιν on the basis of superiority, ὑπεροχῇ ἀγαθοῦ τινός.

(2) No slavery is right or κατὰ φύσιν, as implying βία.

The strong point of (2) is the reflection on the consequences of war, which may be in itself unjust. The strong point of (1) is from the same source; if there is war, one side wins: that side is ἐν ὑπεροχῇ. The question then is put: 'Wherein lies the right to rule.' To this two answers are suggested:—

1°. εὐνοια.

2°. τὸ τὸν κρείττονα ἄρχειν.

The arguments which are said διαστήναι are (1) and (2) not 1° and 2°. The ἀτεροὶ λόγοι = the contradictory of the postulate that the superior in ἀρετῇ should rule. When those who hold (1) urge against those who hold (2) that the victors are ἐν ὑπεροχῇ ἀγαθοῦ τινός, they, in effect, deny it in the same breath, if the origin of the war be unjust. This is why we are disposed to speak of ourselves as naturally free, because we think our enemies are in the wrong in their wars against us.

All Aristotle's views must be regarded from the point of view of his Metaphysics. There he distinctly recognises Evolution (*e.g.* *Met. A.* 3. 984 a 18; *de Part. An.* I. 1, 642 a 19). In one stage the *right* view is 'the weakest goes to the wall'; in another, a high moral notion (τὸ δίκαιον) dictates humanitarianism (εὐνοια).

Dr. Maguire's view of the passage is as follows :—

Aristotle's reasoning here (as elsewhere) is moulded by his Formal Logic in this way :—

1. All slavery is δίκαιον = A.
2. No slavery is δίκαιον = E.
3. Some slavery is δίκαιον = I.
4. Some slavery is not δίκαιον = O.

Now A and E being contraries cannot both be true. One may be true, but both may be false. That the last possibility (that both may be false) is actually the case is shown by the matters of fact embodied in I and O, ὅτι μὲν τοίνυν εἰσὶ φύσει τινὲς οἱ μὲν ἐλεύθεροι οἱ δὲ δούλοι, φανερόν. And this is δίκαιον.

If A and E are both false, *cadit quaestio*. Why discuss them further? Because the two sets of Universalists, the Pro-slavery and the Anti-slavery parties, both of course deny each their own subcontrary. Now this is in both cases the same proposition, δεῖ τὸ βέλτιον κατ' ἀρετὴν ἀρχειν καὶ δεσπόζειν, but, as the same proposition serves as subcontrary to two universals, the plural λόγοι is used. The same subcontrary would not suit if the two Universals were completely isolated: they are not so, and accordingly overlap. How? The Pro-slavery party backs the law of the strong hand as δίκαιον. But δίκαιον splits the Pro-slavery Universal into subcontraries, viz., 'some slavery is δίκαιον,' while it concedes to the other party that 'some slavery is not δίκαιον.' The Anti-slavery party condemns the law of the strong hand as not εὐνοια, and, therefore, not δίκαιον. Δίκαιον, as before, splits the Anti-slavery Universal into subcontraries, one of which is a concession to the Pro-slavery party, 'some slavery is δίκαιον.' The meaning of ἐπαλλάττειν is precise according to Aristotle's theory of predication. The predicate or *genus* is in the subject or *species*, ὑπάρχει. This is the language of comprehension, and according to this language, if one *genus* be in two *species*, not universally but particularly, the *genera* overlap: e.g. there are two *species*, bipeds and quadrupeds; of bipeds some are viviparous, some are oviparous; so biped *qua* viviparous is of the same *genus* as quadruped, and biped *qua* oviparous is of the same *genus* as quadruped. In the language of Comprehension,

as oviparous is in both and viviparous is in both, it overlaps or runs over; *de Gen. A.* II. 1.

Διαστάντων γε χωρὶς τούτων τῶν λόγων, 'if the two propositions were absolutely separated *inter se*' (in place of being contraries); χωρὶς, as in χωριστά applied to the Ideas, means 'in another plane,' as if the propositions were like 'No European is bad,' 'All Africans are black;' here the propositions χωρὶς διεστᾶσι. But the propositions in the text are contraries, and, owing to the laws of contraries and the matter of fact, are both false, and so ἐπαλλάττονται. The last chapter *De Interpretatione* explains ἄτεροι λόγοι. It may not be by Ar., or it may be in the wrong place, but its doctrine is Aristotelian. It explains, *e. g.* that there are three propositions:—

ἀγαθόν is ἀγαθόν.

ἀγαθόν is not ἀγαθόν.

ἀγαθόν is κακόν.

Here the first two are formal opposites, but the third is ἕτερος λόγος, and true or false κατὰ συμβεβηκός. To apply this, the proposition δεῖ τὸ βέλτιον, κ. τ. λ.,* is not formal subcontrary of A and E, but is so κατὰ συμβεβηκός.

*Ὅλως, 'as a rule,' refers to the general body of the Pro-slavery party, and the σοφοί are Plato and Pindar.

The Introduction, which is most able and instructive, will be reviewed more fitly in connexion with the later books, with which it mainly deals. It might with advantage have been divided into chapters. The critical notes would be far more conveniently placed at the foot of the pages containing the text.

* ἔστι τις δόξα ἀληθὴς τοῦ ἀγαθοῦ ὅτι ἀγαθόν· ἕλλη δὲ ὅτι οὐκ ἀγαθόν ψευδής· ἑτέρα δὲ ὅτι κακόν. *De Int.* xiv. 4. What ἑτέρα means is seen further on: ἡ μὲν οὖν ὅτι οὐκ ἀγαθόν τὸ ἀγαθόν τοῦ καθ' αὐτὸ ὑπάρχοντος ψευδής, ἡ δὲ ὅτι

κακόν τοῦ κατὰ συμβεβηκός, *ib.* xiv. 8. That is, the two first are formal opposites. The same point arises in the *Protagoras*, bringing out the distinction between the non-holy and the unholy—a logical lesson required still.

ROBERT YELVERTON TYRRELL.

OLD-LATIN BIBLICAL TEXTS (No. III.)'

THIS forms the Third Part of the valuable collection of Texts of the Old-Latin version issued at the Clarendon Press, and edited by Bishop Wordsworth, Professor Sanday, and Mr. White. Before dealing with the present number, it may be useful to give the readers of HERMATHENA some account of those which preceded it. Part I. contained the text of St. Matthew, from the St. Germain MS. (*g*₁ Paris), edited by Dr. Wordsworth.

Part II., in addition to several important fragments (cited as *n*, *o*, *p*, *a*, *s*, and *t*), contains about one-half of the Gospels of St. Matthew and St. Mark, from the Codex Bobiensis (*k*), a MS. in the Turin Library, of great importance as the oldest representative of 'African' text. It dates probably from the fifth century, in the judgment of Tischendorf and Bishop Wordsworth, and is the remnant of a MS. which, as appears from the signatures of the quaternions, originally contained the four Gospels, those of Mark and Matthew being respectively third and fourth in order. Its text has been printed twice already: by Fleck in 1837, inaccurately; and by Tischendorf in 1847-9, in an inconvenient manner, so that it has been practically unknown. Besides its critical importance, it has a special interest,

¹ The Four Gospels from the Munich MS. (*g*), with a fragment from St. John in the Hof-Bibliothek at Vienna. Edited with the aid of Tischendorf's Transcript (under the direction of the Bishop of

Salisbury), by Henry J. White, M. A., of the Society of St. Andrew, Salisbury. With a fac-simile. Oxford, at the Clarendon Press. 1888. 4to. pp. lvi., 166.

from the statement found in the volume itself, that it is the very book which St. Columban carried in his satchel (*pera*). St. Columban, it may be remembered, was himself the founder of the monastery of Bobbio. Born in Leinster in 543, he had left his monastery at Bangor, Co. Down, about 585, for Burgundy, where he founded other monasteries. Banished thence in 610, and put on board a ship bound for Ireland, he found his way back to the continent, and after many changes settled in Lombardy, where he died in 615, two years after founding the monastery of Bobbio, a place situated in a wild and solitary district in the Ligurian Apennines, near the river Trebia, a place so remote that, as Peyron says, 'ut recte Bobium dicas urbem a tota Italia divisam.'

That Columban should carry a copy of the Gospels in a satchel would be natural. Such a satchel (formerly containing the book of Armagh) may be seen in the Library of Trinity College. Four other such satchels are known: one at Corpus Christi College, Oxford, containing a Missal; another at St. John's, in the same University, containing an Ethiopic Missal, a third at Rome, and lastly, that of the shrine of St. Maidoc. These were called in Irish, as Bishop Reeves informs us, *polaire* or *tiagha lebar*. The volumes were suspended in these from pins in the wall, a plan still adopted in some Eastern monasteries. The African character of the text is at first sight a difficulty in the way of accepting the statement in the MS., but only at first sight. Columban might have acquired the book in Gaul, or still more probably brought it with him from Ireland, since there is no doubt that there was frequent intercourse between the Irish and the Eastern churches.¹

¹ See Professor Stokes, *Ireland and the Celtic Church*, Lecture ix.; and on the history of Columbanus, see the same book, Lecture vii.

The curious thing is, that St. Columban in his extant works does not use the African text. The African character of the MS. is clearly proved by the detailed comparison with Cyprian given in this volume by Dr. Sanday. In particular instances, indeed, the agreement with Cyprian is often a matter of probability only, as the text of that author is itself unsettled; but the general result is quite decisive. The common archetype of *k* and Cyprian is very nearly, if not quite, the most primitive form of the version that we can trace. Dr. Sanday and Mr. White have, with unsparing labour, compiled a lexical and grammatical analysis of the MS., occupying about twenty-five quarto pages—an analysis of great value in studying the affinities of the text. Considerable space is also devoted to the palaeography of the MS. The confusion of F and S points to the use of a long S in the archetype, and therefore to a cursive element. This is remarkable in a book of so early a date. But there are other reasons for supposing the use of a minuscule character for books even as early as the fifth century. The long S occurs, for example, in the *Gaius* of Verona, which is otherwise uncial. But some of the mistakes of the scribe, such as the confusin of I and O, suggest, as Mr. Maunde Thompson observes, that the archetype used was damaged, although not ancient. As he truly remarks, a scribe who could write 'abrode aps te exredist tibi ut sicreat' [for 'abripe (?) aps te expedit tibi ut pereat'] would be soon out of his depth with even a faded text. The scribe's knowledge of Latin must indeed have been small, as every page of the MS. shows. Thus we have 'duas manni habentem' for 'duas manus h.' The second hand has corrected 'manni,' and the *d* and *s* of 'duas,' which are written over an erasure, seem also due to him. 'Sure et gadium' has obviously arisen from *g* being omitted accidentally in 'surge,' then supplied in the margin, and

inserted in the wrong place; the *s* of 'adsume' being also mistaken for *i*.

'We are apt not to realize,' remarks Bishop Wordsworth, 'that ancient MSS. would very often come into the hands of a scribe in very much the same condition, from damp or rough usage, as that in which they now lie in the cases of our libraries. And it is as if they went in this state straight to the compositor, instead of being first deciphered and transcribed by practical scholars.'

In an appendix, Dr. Sanday discusses the Greek text implied by *k*. The Latin texts have, as he observes, a peculiar advantage in this respect, that by the varieties of rendering they enable us to trace the affiliation of one text on another, and the knowledge thus gained of the changes which the text underwent in the West, in the second to the fourth centuries, will help us to determine its state in the East during the same period. He is, undoubtedly, right in stating that it is not by examining a few dozen isolated readings that we can determine the ultimate problems of New Testament criticism, but by the systematic examination of whole groups of readings.

The remainder of No. II. is taken up with the fragments *n*, *o*, *p* (at St. Gall), *a*₂ (Coire; perhaps part of the same MS. as *n*, both closely related to *a*), *s* (Milan), and *t* (Berne). Of these, *p* deserves special notice here, from the fact that the coincidences of its text with that of *r* (Usserianus, T.C.D.) prove that its original was an Irish MS., 'and also that there are certain distinctive peculiarities marking the Irish text from the rest of the European family.' As Professor Sanday observes, 'the isolation of this element will furnish a key by which to test the interpolations in the Irish and Hiberno-Saxon MSS. of the Vulgate, and so may form the starting-point for a series of inductions, of which we can at present but dimly forecast the limits.'

The third part, now before us, contains the four Gospels from the Munich MS. (*q*). This MS. is in semi-uncials of the seventh century, the century in which the uncial hand was broken up. The writing strongly resembles that of the Ashburnham Pentateuch (Palaeographical Society's facsimiles, pl. 234). The initial sentences of the Gospels and of the Capitula are marked by coloured capitals, followed by two or three lines also coloured. The capitals are also adorned with figures of birds: other animals also decorate the blank spaces. On the last page of the MS. is a large cross, containing the portrait of the scribe in the head, and his name in the centre: 'ego ualerianus scripsi.' Such subscriptions are said by Silvestre to be rare in Latin MSS.; but many instances occur from the seventh century onward in Irish, Saxon, and German copies. The reader may remark the subscription in the book of Durrow: 'Rogo beatitudinem tuam scē praesbitere patrici ut quicumque hunc libellum manu tenuerit meminerit Columbae scriptoris qui hoc scripsi . . . met euangelium per xii dierum spatium gīa dñi nrī ss.' The scribe of *q* adds further, 'quia tribus digitis scribitur et totus membrus laborat.' This, in different forms, is a common complaint of scribes. Thus, in an instance quoted by Wattenbach: 'Tria digita scribunt, totus corpus laborat. Dorsum inclināt, costas in uentrem mergit, et omne fastidium corporis nutrit.' Again, 'O quam grauis est scriptura; oculos grauāt, renes frangit, simul et omnia membra contristat. Tria digita scribunt totus corpus laborat.'

The scribe of *q* adds a prayer, 'ora pro scriptore sic mereas corona a saluatore et uitam cum scis eius cultores, et legentes mementote mei peccatori.' (Then follow the words above quoted).

The MS. appears, as well from the writing and the colours used as from the style of the signature, to have been written in Germany. Yet a marginal lectionary note

has 'apparitio' in the sense of 'Epiphany.' This has hitherto been considered a peculiarly Spanish expression.

The Gospels were originally in the usual Old-Latin order, viz. Matthew, John, Luke, Mark. An early binder has made violent but futile endeavours to place them in the Vulgate order, or at least to put John last—futile efforts, since the end of one Gospel and the beginning of the next were on the same leaf; so that he has only produced confusion.

It may well be thought that the scribe who could produce such specimens of Latinity as we have quoted would fall into many errors from mere carelessness or ignorance; and this is the case. Such errors as 'congrauit,' 'rinquetur' (= relinquetur), 'hierolyma,' 'ailli' (= ait illi), 'habant' (= habebant), are easily explicable. There are many less excusable omissions which the scribe himself has afterwards corrected. A similar eye-error has given us 'discipulosuos,' 'qūmercestra,' for 'qūm (= quoniam) merces uestra,' and other instances of haplography. The counter error appears in 'pateter,' 'ueritatatis,' 'patitientiam,' &c. It may be noticed that the usual contraction for 'quoniam' throughout the MS. is 'qūm,' not 'qnm.' Some errors, on the other hand, seem to be due to careless pronunciation; *ex. gr.* 'abuisti,' 'odie,' and, per contra, 'hired,' 'habiit.' Again, 'aedunt,' 'habaebat,' against 'terre,' 'Cesar,' 'prestat,' &c. An interesting example of dittography occurs on fol. 250 *b*, the entire of the first column of which is written over erasure, the scribe having originally written the first column of 249 *b* here again. This seems to indicate that his archetype was similarly written in two columns, and that he was copying page for page. There is another large omission occasioned by homoeoteleuton in Matth. xxiii. 13–28. This passage would have occupied about three pages.

Amongst the readings and renderings, we may cite the following :—

Matth. i. 15. consummationem = *b* (obitum . . . *f*; mortem, *ad*).

„ 16. regionibus = *a* (finibus, *bf*).

„ v. 2. possidebunt terram = *b* (hereditabunt, *f*).

„ 7. miserabuntur = *d* (miseriam consequentur, *f*).

„ vi. 25. quid induatis = *b* (induamini, *f*).

John i. 33. ignorabam = *b* (nesciebam, *f*).

„ 42. respiciens = *a* (intuitus, *f*; intuens, *b*).

„ ii. 19. soluite = *ab*; suscitabo = *ab* (destruite . . . excitabo, *f*; restaurabo, *e*).

„ 22. rememorati = *ab* (recordati, *f*; commonefacti, *e*).

„ iii. 21. perfecta (facta, *f Am.*; operata, *de*; operatae, *b*).

Mark ii. 12. quia numquam taliter uidisse se (quia numquam sic uidimus, *f Am.*; quoniam taliter non talia uiderunt, *b*).

„ 21. adsummentum = *di Am.*; insumentum, *a*; commissuram, *b*; iniunctionem, *e*; additamentum, *f*).

„ 22. alioquin dirumpit = *Am.* (alioquin dirumpet, *b*; ne dirumpat, *f*).

It is noticeable that the term 'expello' is used of casting out devils (= *δ*) instead of the Italian 'eicio.'

Dr. Hort places *q* among the Italian class of MSS., the type 'due to various revisions of the European texts made partly to bring it into accord with such Greek MSS. as chanced to be available, partly to give the Latinity a smoother and more customary aspect.' He therefore classes it with *f* against *ab*, etc., which represent the 'European' text. Mr. White arrives at the conclusion that, although in the underlying Greek text *q* may run with *f* against *ab*, etc., yet in the Latinity this is less the case, and that *q* represents an older type of text. Sometimes it presents what appear to be genuine African readings, now and then it agrees with the peculiar text of D, and occasionally it stands alone.

A detailed analysis of a few chapters in each Gospel yields the following result:—

Agreement with *δ* against *f*—Matth. 34; John 33; Luke 34; Mark 30.

Agreement with *f* against *δ*—Matth. 16; John 23; Luke 9; Mark 16.

Most of the agreements with *δ* being in rendering, those with *f* in reading; the net result is, that *q* cannot be classed with any one definite branch of the Old-Latin family, having been influenced by each group in return. In such inquiries, what one usually turns to first are the test-passages; but these, as Mr. White remarks, are fallacious, because they would be the first to be altered by a reviser. The opinion above stated as to the affinities of *q* is, he states, strengthened by a continued verse-by-verse examination.

I have noted a few typographical errors:—

- Page xxii, line 9 from bottom, *for* 'uirum *read* 'uinum.'
- „ xxxi, line 9 from top, *for* 'Mestro' *read* 'uestro.'
- „ xxxix, last line, *for* 'agreemement' *read* 'agreement.'
- „ xlii, line 16, *for* 'praeclarius' *read* 'praeclaris.'
- „ xliii, line 20, *before* 'sub' *insert* 'quae.'
- „ *ib.*, last line but one, *for* 'forsitam' *read* 'forsitan.'
- „ 157, notes on fol. 183 and on fol. 191, *for* 'spatiolae longiores' *read* 'spatiola longiora.'

T. K. ABBOTT.

FAUSSET'S *PRO CLUENTIO*.¹ .

IT cannot be denied that there was room for a new edition of this, the most interesting, if not the most brilliant, of Cicero's speeches, which should supplement, but not supersede, the valuable edition of the late Professor Ramsay. The intrinsic merits of that work are such, that the little world of classical students will not willingly let it die. The author of the *Manual of Roman Antiquities*, found in the *Cluentius* a congenial field for the exercise of his rare knowledge of Roman archæology and law; and the fine qualities of his literary style and artistic feeling are happily employed in unfolding the intricacies of this strange domestic drama. Professor Ramsay worked under self-imposed limitations, which are now somewhat out of fashion. The golden rule of *μηδὲν ἄγαν*—that 'subtle art of not too much'—guides every page of his writings, and it taught him that even in a commentary to be thumbed by school-boys instruction in the simpler rules of grammar might safely be left to the 'ferrea pectora' of their masters. He held, too, that a truth is none the less true for the graceful manner of saying it, and his tersely-written notes stand in marked contrast to the pages of more modern commentaries, where a torrent of citation pursues its headlong course over opposing masses of parentheses, afterthoughts, and strange runic symbols, without pause or break, till it dies at last of mere exhaustion. The labours

¹ M. Tulli Ciceronis *Pro A. Cluentio* Notes, by W. Yorke Fausset, M.A.: *Oratio*, with Explanatory and Critical Rivingtons, London.

of German scholasticism have rendered this style of annotation as easy as it is now superfluous. Our older scholars had to read for themselves, and their minds were in the truest sense informed by the process. Their beardless successors find knowledge ready to their hands, and original research is now supplanted by scissors and paste. In Ramsay's day the field of classical letters did not yet 'lie Danae' to the trade; speculating booksellers had not yet begun to bait their snares for callow graduates of the schools, who, equipped with their Merguets, their Drägers, their Nägelsbachs, may now proceed men of learning at five-and-twenty, and, by quoting authors they have never read, unfold the beauties of the Latin tongue before they have mastered the uses of their own. The 'wholesale manufacture' of classical books which is going on around us is bringing English scholarship into disrepute abroad, and has been justly censured by judges well qualified to speak in America, who are calling for a 'scourge to drive these money-changers from the classical temple.'

It is pleasant to turn from this mushroom growth of crude and useless *ἐπιδελξίς* to a school edition of real value, by a conscientious and well-informed scholar of high promise. Mr. Fausset, indeed, is not wholly free from the taint of his time, when that

'Love of letters, overdone,
Has swamped the sacred poets with themselves.'

His seventy-seven pages of a large-type text are followed by nearly two hundred closely-printed pages of notes. A simple reference to established and easily-accessible authorities would in many cases have saved this expenditure of printer's ink. For example, 'the more advanced students,' for whom the work is intended, hardly

need to be told a 'regular' construction of *spero* (§ 36, l. 30), nor should they require an elaborate account of such familiar forms as the moods in *condemnassent . . . debuerunt* (§ 60), *apprehenderam* (§ 52); or the tenses of *fuisset* – *esset* (§ 65). Or, if these points are imperative, there are others which should not have been omitted, *e.gr.* the double negative in the very first clause; *illud dubitare* – *vivere* (§ 10), contrasted with *illud dubito quin* (§ 49) (*cf.* Reid, *Sull.*, § 4): the attraction in *istam ipsam causam* and *illud ipsum* (§ 59); the use of 'adeo' in § 80 (*atque adeo* and *id adeo*); the meaning of *respondere* (§ 59), of 'inimicus Opianicus' ('ill-disposed'), 'infesta mater' ('in arms') (§ 42), followed by 'infesta atque inimica mater,' 'unconcealed antipathy' (§ 44): (*cf.* Tyrrell, *ad Att.* II. 19, 3, 'inimici erant equitibus, hostes omnibus,' where 'hostes' corresponds to 'infestus' here). Again, Mr. Fausset never fails to notice such 'loci communes' as *anaphora*, *occupatio*, and the rest, and on p. 141 he has drawn a sketch of *chiasmus*, which 'non Archimedes potuit melius describere'; but he does not notice the delicate antithesis of meaning in § 80 (*dicere* – *negare*; *arguere* – *infitiari*; *docere* – *infirmare*), nor the subtle asyndeton in § 67–8 (*Staienus ille*), which leaves the aptness of the simile to speak for itself. There is an equally dramatic use of asyndeton running through all ch. LIX.

But these occasional superfluities do not detract from the value of what remains. Mr. Fausset's Commentary on every page gives evidence of refined scholarship and accurate knowledge: witness his notes on 'ille' (§ 8), 'atrox' (§ 9), Cicero's use of diminutives (§ 37), 'que' (§ 6): (but that on 'et,' § 47, needs correction: Cicero only employs 'et' adversatively after negatives: forms like 'turbidos et nihil ausos,' *Tac.*, belong to later Latin); 'quidem' (§§ 50 and 54), the 'jussive' subj. (§ 90). He has corrected more than one important error of Ramsay: *e.gr.* the 'non liquet'

vote (§ 107-8), and the difficult passage in § 116 ('*litis aestimatio*'). This list might be largely increased; there remain, however, a few passages to which attention may still be invited.

In § 98, '*causam de ambitu dixerunt, qui accusati sunt*,' etc., Prof. Nettleship has suggested '*quia*.' It seems incredible, but it is so recorded by Mr. Fausset, who adds, 'The argument is far from clear.' But it is quite clear, when the force of the relative is understood. It is an ordinary instance of the relative *refuting* a previous assertion (*cf.* Cic. *Phil.* II. § 4, l. 29, Mayor—add §§ 27 and 71). Accius had argued: Popilius and Gutta, who were convicted of '*ambitus*,' owed that conviction to the '*invidia*' arising from the bribery at the trial of Oppianicus. Cicero denies this, maintaining that they were really guilty of '*ambitus*'; and this he proves by appealing to the character of their accusers, who, having themselves been convicted of '*ambitus*,' were anxious to retrieve their position by conducting a successful prosecution for the same offence. Is it likely, then, asks Cicero, that these persons would have been admitted to the '*praemia legis*,' unless they had satisfied the object of that law by making good their charge of '*ambitus*'? Other instances of this use of the relative occur in § 91 ('*quae res fraudi fuit*' and '*qui tum interlitus*,' etc.).

On p. 140 Mr. Fausset has an heroic note on '*cum*,' and quotes the statistics of Hoffmann and Lübbert, who seem to make much ado about a small matter. The fact that Plautus has 'the subj. 9 times and the indic. 229 times' after '*cum*,' proves nothing more than that in Plautine Latin '*quom*' still retained its natural construction, as a rel. in acc. of duration of time, with '*diem*' as its suppressed antecedent ('now that'), and had not yet acquired the causal sense ('seeing that'), which it afterwards received. In § 83 the sudden change from subj. to indic.

may, as Mr. Fausset suggests, be due to the identity of subject in the latter of the two clauses; but it seems more natural to refer it to the same desire of variety, which leads Cicero in § 113 to write 'rem ullam obiectam *in quenquam*, quae Fidiculanio obiecta non sit.' But in § 29, where *auditis cum dicuntur* is followed by *audiebat cum diceretur*, the reason of the change is different, and Mr. Fausset fails to catch a very effective point. Cicero there says: 'If my recital of Oppianicus' crimes shocks you, how much more must Canutius' narrative have shocked his hearers? For the facts you hear from me owe nothing to my plain, unvarnished tale (*cum breviter strictimque dicuntur*); but the matter of Canutius' speech was heard under the influence of his eloquent and impressive manner (*cum graviter diuque diceretur*'). What in the one case is a mere temporal coincidence (*indic.*), was in the other an 'attendant circumstance' (*subj.*), and the difference between the two forms is the same as between 'Fuit tempus, cum Germanos Galli *superarent*' (Caes. G. 6, 24) and 'Fuit cum hoc dici *poterat*' (Liv. 7. 32).

In § 31, 'ut ne eripi quidem pecunia posset,' Mr. Fausset rightly retains the text, but resorts to a needless theory of ellipse to explain 'ne - quidem.' He should rather have referred to Dr. Reid's note on *Acad.* I. 5, which disposes of the old heresy, that 'ne - quidem necessarily marks a climax. Here we may translate 'so that neither could he have been saved by bribery,' and compare § 107, where to translate 'ne is quidem absolvit' by 'not even he acquitted,' would produce nonsense.

In § 28 Mr. Fausset apologises for *quenquam* as 'not irregular,' because there is a 'negative implied,' and quotes Liv. 25, 6, 17, as an exceptional use, because the implication is 'positive and not negative.' Both these statements require reconsideration. A negative is by no means necessary to 'quisquam' (*cf.* Verr. II. 4. 22, 28: 'Si

("whenever") quicquam caelati aspexerat' and Tusc. 3. 8. 22, where the sense is affirmative). On the contrary, *quisquam* in a sentence like § 113, 'Nego rem esse ullam in quenquam illorum obiectam, quae non' etc., gives, as Madvig says, 'generalem affirmationem, negationi ita contrariam, ut ei sufficiat, unum omnino, quodcunque tandem sit, esse' (*De Fin.* Exc. vi., where the subject is illustrated at length). Hence the word is used in negative sentences, where the negation, expressed or implied, extends over the whole proposition. And in the passage quoted by Mr. Fausset from Livy the implication *is* negative: 'nos, quibus, nisi quod commisimus, ut quenquam ex Cannensi acie miles Romanus superesset, nihil obici potest.' It is one of a large number of passages quoted by Riemann, *Etudes*, etc., p. 134, ed. 1: 'ou il est question de choses, qui ne devraient pas avoir lieu, et ou il y a une idée de *blâme*, qui est en somme encore une idée négative.'

Mr. Fausset's note on 'aerarios,' p. 169, will be welcome to many, and is a good example of the intelligent use he makes of the best German authorities. His faith in these authorities is beyond cavil, but it will not remove mountains. Thus, on p. 133, he follows Mommsen-Marquardt, explaining 'stemma' = 'imagines,' because 'from one (imago) to another painted lines were drawn to express the pedigree which connected them.' Why painted lines? But this view is inconsistent with the ancient authorities. Suet., *Galb.* 2 says: 'imperator stemma in atrio proposuerit, quo paternam originem ad Jovem, maternam ad Pasiphaen referebat.' Surely Galba did not pretend to have 'masks,' *expressi cera vultus*, of Jove and Pasiphae: the death of the former at least is not recorded. Nor can this account be borne out by the 'loci classici' on the subject, Plin. 35, 6, and Seneca, *de Ben.* 3. 28. 2. In the former passage the 'stemmata' are distinctly contrasted with the 'expressi cera vultus,' which 'singulis disponebantur

annariis . . . *stemmata vero* lineis discurrebant ad imagines pictas.' The 'stemma' was probably a genealogical chart (*cf.* 'generis tabula,' Juv. 8. 6), and Pliny seems to describe it as 'laid out with lines to illustrate or correspond to (*ad*), the painted wax imagines ('pictos vultus,' Juv. 8. 2), *i.e.* it was a sort of key to the 'imagines' in the atrium. So Seneca ('imagines in atrio exponunt, et *nomina* familiae suae longo ordine ac multis stemmatum illigata flexuris in prima parte aedium collocent') distinguishes the 'imagines' and the 'stemmata,' and explains the origin of the latter term from the painted garlands which illuminated the chart. Seneca expressly states that it was the '*nomina*' which were festooned. The 'imagines' themselves seem only to have received garlands on special occasions: C. Mur. 86: 'laureatam imaginem' seems to imply that the decoration was exceptional.

Again, in § 15, Mr. Fausset is mistaken in identifying the 'cubile' with the 'lectus genialis' (§ 14). The latter was not intended for use, but stood in the atrium as a sign that the master of the house was married: Hor. *Ep.* 1. 1. 85: 'lectus genialis in aula est.' From its place fronting the entrance it was, as is well known, also called 'lectus adversus,' and it was 'laid anew' when a fresh marriage was contracted. Thus Cicero's words 'lectum illum genialem, quem biennio ante filiae suae nubenti straverat, sibi ornari et sterni iubet' are well illustrated by Propert. 4. 11. 85:

Seu tamen adversum *mutarit* ianua lectum
Sederit et nostro cauta noverca toro (*Postgate*, ad loc.)

No passage in the *Pro Cluentio* is better known than that describing the dealings of Staienus, 'hominis in iudiciis corrumpendis exercitati,' with his victims Bulbus and Gutta. Yet the exact point of Cicero's joke has hardly been appreciated by the commentators. The words, § 71,

'ut erat semper praeposterus atque perversus, initium facit a Bulbo,' are usually referred to the 'gustatio' of the Roman dinners. But this leaves 'Bulbo' without point. That the onion, however, had its own place on the Roman *ménu* appears from Hor., *S.* 2. 4. 58:—

tostis marcentem scillis recreabis et Afra
potorem cochlea,

where 'scillis' seems wrongly explained as a fish by Orelli and others: the word means 'onions': *cf.* Plin. 19. 30. 5: 'bulborum nobilissima est scilla—exacuendo aceto nata' and Theocr. 14, 17:

βολβός τις (?) κοχλίας ἐξαιρέθη ἥς πότερος ἀδύς

Thus Staienus is 'praeposterus' because he begins (*prae*) with the Bulbus, which properly comes after (*post*) dinner. Probably the 'bulbus' was introduced 'inter scyphos' from Greece, and it should perhaps be added to the 'rosae et unguenta' as a feature of the 'Comissatio' or 'Graecus mos bibendi' by Mommsen-Marquardt, s. v. *cena*. In Athenaeus 2, 64-9, βολβός and κοχλίας are repeatedly mentioned as διεγερτικοί, and some verses are there quoted from Philemon, περὶ τῆς τῶν βολβῶν σκευασίας, which, after mentioning ὄξος among the numerous dressings suitable to the βολβός, conclude with the line:

αὐτὸς δ' ἐφ' αὐτοῦ σὺν πονηρὸς καὶ πικρός.

These words are a good comment on the passage of Cicero immediately following: 'conditor totius negotii Guttam adspersit huic Bulbo. Itaque minime *amarus* visus est (Bulbus).'

The weak point of Ramsay's edition was his text. Classen had been the first to show that the existing MSS. of the Cluentius exhibit two recensions, of which the better is represented by AB (Baiter's ST) and the inferior by *ρ*

(Baiter's M). ST, though younger than M, are in many instances supported by the fragmentary Turin palimpsest of 5th or 6th century. Ramsay attempted an elaborate defence of M; but his arguments are not convincing, and Mr. Fausset is well-advised in accepting the conclusions of Classen. Yet there are a few passages where M has undoubtedly preserved the true reading: *e. gr.* § 86: 'qui cum matre?' is felt at once to be superior to the 'qui cum matre habebat simultates' of ST, where the indic. mood is intolerable. And in § 72: 'ne, si se Ligurem fecisset, nationis magis *suae*, quam generis, uti cognomine videretur,' it may be doubted whether M's 'suae' should be hastily rejected. Mr. Fausset pronounces it 'superfluous.' It may, however, be an instance of that idiomatic use of 'suus,' which appears in Propert. 2, 9, 30: 'aut *mea* si navis staret in oceano', 'if I had a ship moored.' Compare Hor. *Epod.* 1. 26: 'aratra nitantur *mea*,' 'plough of mine,' and Ov. *Am.* 3. 7: '*meus* campus.' So here 'nationis suae,' 'a race that was his.' This use of the possessive adj. is suited to the hypothetical form of the sentence.

Again in § 82: 'ad ipsum cubile, vobis *ducibus*, venire possumus,' Mr. Fausset prints Prof. Nettleship's conjecture 'indicibus' instead of 'iudicibus' (ST) or 'ducibus' (M). But he should at least have noticed Prof. Davies' defence of the latter reading in a previous number of this review (vol. iv. p. 409), where it is pointed out that 'ducibus' refers, not to the jury, but to the prosecutors. The correctness of this reading, which alone preserves the metaphor of 'ferae,' may be all but proved by comparing the cognate passage, § 163-4 ('vobis isdem patronis . . . annos octo meditati accusatores'), where 'vobis' also refers to the prosecutors, and the concluding words precisely correspond with 'anni octo sunt, quom ista causa in ista meditatione versatur' of the passage under notice.

In § 74 Mr. Fausset reads 'illo' with P, instead of 'Aelio,' S. But the latter has more point. Cicero is quoting the words of Canutius, who would naturally speak of his client Staienus by his new aristocratic title. Mr. Fausset's handling of critical questions is marked throughout by sagacity and taste; but in § 106 he should not have marred his accurate defence of 'esse' by going on to suggest 'fuisse.' That the present inf. denotes the 'permanent characteristic,' and is not at all 'a poetical use,' appears from the cognate passage in § 56: 'voluit cognoscere, utrum iudices *essent* severi, an etiam consilia conscientiasque supplicio dignas *iudicaret*': 'whether juries (not 'the jury') *are* strict, or whether they *consider* design and complicity' (note the plr.) etc. Again in § 3 he rightly follows Ramsay in keeping the 'vos' (ST), but misses the point of 'oporteat' by paraphrasing 'the advocate's imperfect statement.' Cicero says, that 'invidia' should be considered, not like questions of fact (crimina) with reference to the *ex parte* statements of rival counsel, but on abstract grounds of right and wrong (oporteat).

It only remains to say a few words of the Introduction, which opens, and the Glossary, which closes, the book. The latter 'does not pretend to exhaust even the limited number of noteworthy words which occur in the speech.' But why not? Sound teaching in Latin etymology—and Mr. Fausset's etymological teaching seems very sound—is not so common, and in a future edition room might well be found for interesting and often misunderstood words like 'secus,' 'disertus,' 'igitur.' The Introduction seems the least successful part of the book, and students will rather turn to Mr. Froude's brilliant, though very inaccurate résumé, or to the crisp and lucid narrative of Ramsay. Mr. Fausset's sketch is rapid and disjointed, rather than clear, and is written in a tone (Oppianicus is a 'bold and wicked man') which slightly jars upon the ear. A

passing tribute must, however, be paid to his defence of Sassia on p. xxxix, which, though worthy of a better cause, does honour to the author's gallantry, and affords pleasing evidence of the susceptibility of his heart. On the disputed question of the precise charge upon which Cluentius was tried, Mr. Fausset conjectures that he was accused under 'both clauses of the Lex Cornelia, the fifth and the sixth.' But there are obstacles in the way of this view. If Cluentius, as 'eques,' was really liable to the penalties for 'judicial murder,' which Sulla's law inflicted only upon senators, why, it may be asked, did his accuser weaken what probably would have been a strong case, by dragging in charges of poisoning, which were groundless on the face of them? And, if the charge of bribery was specially preferred against Cluentius, why was not he, like Fidiculanus under a similar charge (§ 104), tried for 'repetundae' in Cicero's own court (§ 147)? It seems safer to suppose that Cluentius was accused of poisoning only. His accuser had indeed no hope of making good that charge. What he did hope to do was, by bringing Cluentius to trial under the clause of the Lex Cornelia treating of poison, to give the jury an opportunity of finding him guilty of acts of bribery committed in 74 B.C., which, if committed in 66 B.C., would, owing to the Lex Aurelia of 70 B.C., have rendered him liable to the spirit, though not to the letter, of Sulla's clause treating of judicial murder.

In conclusion, Mr. Fausset may be safely congratulated on having established his reputation by producing a work already of high value, and only needing a little excision, revision, and precision, to render it indispensable to all students of the 'Pro Cluentio.'

W. T. LENDRUM.

A CORRECTION.

I OUGHT long since to have corrected an error into which I fell in a Paper in HERMATHENA, vol. iv., p. 311. I there suggested that Lewis and Short might, perhaps, be right in making the *i* of *tribunicius* long (-*īcius*); but a learned friend, who read my Paper, referred me to verses in Lucan which prove it to be short. My apology must be, that those verses had escaped my observation or my memory, and that neither in Forcellini, nor Freund, nor Smith, nor Riddle, nor Andrews did I find any *reference* which fixed the quantity; nor in Roby, though the marking -*īcius* given by this last accurate scholar ought to have made me slow to express a doubt. Would it not be desirable that, in an article of a Latin (or Greek) dictionary on a word which requires to have the quantities of its vowels ascertained, *one* of the passages cited should be specially chosen for that purpose, and indicated to the eye by brackets or inverted commas, or in some such way? Thus, on *tribunicius* might be given:—

‘Saeva trībūnicio maduerunt robora tabo.’—LUCAN, ii. 125.¹

The result of the inquiry concerning the termination

¹ A useful indirect result of this practice would be, that words for the quantities of which there is really no authority extant would remain unmarked, instead of having assigned to them quantities founded only on conjecture, or doubtful analogy, and copied by each Lexicographer from his predecessor. To cite a few words coming under letter A, can the markings of *acūpedius*, *apīca*, *āvorta*

be sustained? Do not *ἀκούους*, *ἄκους*, *ἀορτή* and *ἀορτήρ*, rather indicate short vowels? And must *ἀχροαμα* be always wrong, though, as we see in Aristoph., *Aves*, 1145, *ἀκροδομαι* has the *α* naturally short? I wish some of our younger scholars would undertake the examination of such cases of questionable quantity occurring in the Dictionaries most in use among us.

-*icius* is, that the only Latin word not formed from a past participle (after the analogy of *emissicius*), which has the *i* long, is *novicius*. Can it be for *novo-vicius* = νεοικος? Cf. Juv. iii. 265. (See, however, for another explanation, Curtius, *Grundzüge*, ed. 4, p. 629.)

I may add, with respect to another word of which I spoke in the same Paper, that Statius, *Silvæ*, iv. 9, 39, has *defrûta*, thus agreeing with Virgil. Perhaps there is some error of text in the Plautine passage, where the word appears as *defrûtum*. The word, as I mentioned in the Paper referred to, is marked in the latter way twice by Curtius, *op. cit.*, pp. 486, 520. In Wilkins and England's translation, edition of 1886, it is marked *defrûtum* in the former place (probably by oversight), *defrûtum* in the latter. Vaniček (*Griech.-Lat. Etym. Wörterbuch*) admits both quantities.

JOHN K. INGRAM.

LAND REVENUE AND TENURES OF INDIA.

KNOWLEDGE of the leading principles of Revenue Law is a valuable aid to the study of the whole Indian Law of Property. Land is the principal kind of property possessed by natives of India, and the rules which govern the possession, acquisition, and distribution of landed property govern all property, *mutatis mutandis*. Now, the Revenue system takes cognizance of the relations between the Sovereign power and the holders of land, and also of the relations which subsist between the different classes of such holders. The fact that the public revenue depends so largely upon a share of the rent of land renders it necessary that the revenue authority should be able to follow every step in the distribution of landed property.

The Revenue system, as at present administered, may be said to rest on two broad principles:—

1. The Sovereign power is entitled to a share in the produce of all land, or its equivalent in money, the amount of such contribution being virtually fixed by the Sovereign power itself.

2. The contribution to be levied from every portion of land follows the distribution of such land, and is claimable from the person or persons actually in possession of such land, and is the first charge upon it.

It may be thought that these principles, thus stated, are mere truisms, and do not throw very much light upon the question. The first is simply the right of taxation,

inherent in all governments; one essential difference between a despotism and a free constitution being, that in the latter the right of taxation is controlled by popular assemblies, now mostly representative. The second may be construed into the obvious axiom, that direct taxation must be levied on property of some kind, and therefore must be proportioned to the distribution of property. A little attention, however, may suffice to enable us to see that this is a very imperfect account of the matter.

In India almost all property is held by family groups, and not by individuals. This, as the readers of the late Sir Henry Maine's works are aware, is simply the archaic form of property in the oldest civilizations. In India the family group, as the unit of property, has survived; in other parts of the world it has perished, or is perishing.

Now, the Revenue system in British India is continuous with the Revenue system of Mahomedan India; and that was, with certain exceptions, which we shall soon see, continuous with the system found there under the Aryan rulers, whom the Mahomedan superseded. I may mention that by the word 'Aryan' I mean the tall and comparatively fair-skinned race or races which in the dawn of history are found as conquerors in India. They are the ancestors of the castes of Brahman, Kshatriya or Rajput,¹ and Vaisya, the three high, or 'twice-born,' castes. The various low castes described in Manu's Institutes as Sudra are representatives of the aboriginal races enslaved by the Aryans. These Aryans constituted an aristocracy, and, as in the case of other aristocracies, claims are often made to a participation in the 'blue blood' which have no historical founda-

¹ I follow popular usage in speaking of the Aryan warrior caste as Kshatriya or Rajput, indiscriminately. Strictly, there is a distinction; the now extinct Kshatriya caste being traditionally of pure Aryan blood, while the more

modern Rajputs are of somewhat mixed pedigree. In India, however, the caste calls itself Rajput or Kshatriya, indifferently, and in a legal tract the distinction may be neglected.

tion. As I am not writing a treatise on Hindu society, I shall merely mention the one example which bears on my own subject. The chiefs of many hill tribes claim to be Rajputs, though they are certainly not of Aryan descent. But their society having come under the influence of the Aryan aristocracy of the plains, they think it desirable to possess the prestige of high caste.

It may be well to explain here, that agriculture was not held to be a servile occupation. Agricultural labour was, nevertheless, for the most part left to Sudras—aborigines, or the offspring of intercourse between Aryan men and aboriginal women. Sudras also performed all strictly servile and mechanical offices. I shall refer to the Sudras as 'serfs,' and shall speak of the Aryan freemen as controlling cultivation, when I am describing an archaic state of society. But the free Aryan might actually till the soil at any time, and a very large number of high caste men actually do so now.

We find, then, an Aryan aristocracy in possession of the soil of the greater part of Northern India, and having under them an enslaved aboriginal race. The territory thus occupied by the Aryan tribes was divided into a number of kingdoms, and these kingdoms again were divided into minor principalities. These principalities were the territories of the various clans of Rajputs or Aryan warriors; for the holding of land—what we should call landlordism—was a special attribute of the warrior caste. The Brahmans and the Vaisya, or merchant caste, only acquired land, it may almost be said, accidentally. In later history, it is true, we find Brahman, Vaisya, and even Sudra land-owning communities; but in early Aryan times it was rare for any but a Kshatriya clan to own land. The clan had its own subdivisions, each under a subordinate chief; and these subdivisions were again subdivided. The ultimate unit thus reached was what is now

known as the Village Community. The village estate was held strictly in common: that is, the family group of Aryan freemen who inhabited it controlled the cultivation carried on by their Sudra serfs, and themselves collected the produce and divided it, after setting apart the share claimed by the territorial chief, to whom they owed immediate allegiance. It was his duty, in his turn, to set apart a portion of his tribute as the due of the chief next above him, and so on in regular gradation until the sovereign of the whole kingdom had received his dues. It is easy to see that this differs from taxation as we conceive it. The sovereign, as disposing of the whole force of the State, could, no doubt, fix the contingent of any subordinate territory down to a single village estate; but there was a customary limit, and there was no particular reason why that limit should be exceeded. The only extraordinary item, generally speaking, in an Aryan king's budget would be a war; and his Rajput clansmen constituted a complete standing army, always on a war footing, and always easily mobilized. Thus the State's share of the produce tended to become a rent, not a tax; the proportion to be yielded being theoretically constant, but practically determined partly by custom and partly by a struggle between payer and receiver.

No speculation upon the evolution of rent would be complete without noticing the status of the serfs. These were descendants of the aboriginal conquered races, or of more or less irregular intercourse between Aryans and aboriginal women. But their slavery, for the most part, was communal, and not personal. The actual cultivators of the soil were serfs of the village commune, or of family groups within the village commune, and not of individual masters. Now, it is easy to understand that a communal slave enjoys an easier life than the slave of an individual master. The business of the Rajput

freeman was, for the most part, arms; that of the Brahman, religious contemplation, or the pursuit of learning. A worldly-minded Brahman might be a minister of State, or hold some analogous administrative position in a lower sphere. As population multiplied, Brahmans also adopted the profession of arms; but in hardly any case did Brahman or Rajput undertake any pursuit less dignified than that of arms or learning. The Vaisya freeman, again, had very little connexion with the management of his village communal estate. The result was, that the communal serfs were left very much to themselves. The agriculturists must yield their customary dues in produce; the artisans must perform their customary service; no serfs must leave the village; but in all other respects they were practically free. It may be added that the germ of a right of occupancy is to be found in the praedial slavery of the Indian communal labourer. As I have said, he could not leave the village; but it was the interest of the village commune to make it worth his while to remain without compulsion. The incessant wars of the different kingdoms and clans kept population down. Serfs were killed in these raids and invasions, but still more often they were captured and carried away. Labour was valuable, and as we shall presently see, the labour of the servile class continued to possess a value even after British supremacy had abolished the status of slavery.

Practically, then, rent was the amount taken by the commune of village freemen from their communal serfs. Most of this they naturally kept to themselves; but they paid something to the chieftain on whom they were dependent, and he to the over-lord, and so on until the tribute reached the sovereign. Something resembling this system is even now to be found in Rajputana and in other parts of India, where historical and local circumstances have contributed to its preservation. The Mahomedan conquest

was the first influence which largely modified the system I have been endeavouring to sketch out. Strictly speaking, I should say 'conquests,' not 'conquest,' for there were several invasions of India by Mahomedans from Central Asia. But the result of this colonizing process was the partial, and only partial, breakdown of the old land system. The great sovereigns, Kings of Lahore, of Delhi, of Kanauj, of Ajudhya, and of Patna, were replaced by Mahomedan potentates, who themselves eventually came to owe allegiance to the Mogul Emperor of Delhi. In the more inaccessible parts of Central India some Rajput States survived, a few of which exist until now. But the old Hindu States perished, and most of their greater feudatories were supplanted by Mussulman nobles. In what we may call the third, fourth, and lower ranks of the Hindu aristocracy, however, a good many still held their own. Some of these became converts to Islam, and received from the Delhi Emperor or his deputies a formal investiture, whereby their chieftaincies were recognised. In many cases the authority of the Mahomedan imperial officers was resisted or ignored, or the officer himself was bribed. Matters ended in a compromise; the local chief was accepted as a mediator with the village communes, with or without a formal investiture. The one institution which almost absolutely held its own was the village commune.

Something resembling the state of things I have been describing actually subsisted in Oudh up to the year 1856.¹ The potentate to whom the East India Company granted the title of King of Oudh was the Nawab Vazir, or Lord Lieutenant of the Mogul Emperor. The old nobility of

¹ The best authority on Oudh, previous to annexation, is Sir W. H. Sleeman, *Journey through the Kingdom of Oudh in 1849-50*. The edi-

tion in my possession was published by Bentley, in 1858, and I do not know whether or not the book is out of print.

the province, however, had more or less kept their positions, some with and some without patents from the Court at Lucknow. Some had conformed to the Mahomedan religion, but the majority continued Hindus. These nobles paid revenue to the collectors sent down from Lucknow, or withheld it when they were strong enough; and they themselves received rent, or revenue, from the village communes, who in their turn got their dues from the actual cultivators. In Oudh the chief result of the annexation has been to reduce all this to a regular system. The British Chief Commissioner, it is true, has taken the place of the King, or Nawab Vazir; but the native nobles continue to enjoy their share of the rent, paying into the Government Treasury that which is assessed upon them, and receiving from the village communes the amounts for which the latter are made liable at the periodical Land Revenue Settlements. To go into further particulars would be to anticipate. I merely mention the case of Oudh, because, owing to historical accidents, it is the best preserved specimen of a province showing what may be called the strata of Aryan and Mahomedan economical and fiscal systems, and their crystallization under British influence.

For it is a remarkable phenomenon of British supremacy in India that each stage of our dealing with the land revenue and the tenure of land is marked by its peculiar characteristic, communicated to it by the tone of British thought which prevailed for the time being. Lord Cornwallis and the administrators who surrounded him confounded the revenue collectors of the Mogul Empire with the heads of families who, as I showed above, were struggling with these same Mogul collectors to retain their old chieftainships. Because both these classes were loosely described as Zemindars—which word may itself be loosely translated landowners—Lord Cornwallis and the framers of Regulation

I. of 1793, mistook them for landlords or country squires of the English pattern. Hence the famous Permanent Settlement of Bengal—a measure which has been so fertile of political and economical controversy. The principal features of the Permanent Settlement were as follows:—
I. The land revenue payable by the Zemindars was fixed for ever in money, having been previously mutable at the will of the Government. II. The Zemindars were declared to be landed proprietors—a status to which I have already shown that they had no claim. III. Some provision, however, was made for subordinate interests and claims: an inadequate provision, and resting upon no very definite legal foundation, but still sufficient to keep the way open for further reforms as opportunity arose. It would be anticipating, and would lead too far into a discussion of detail, if I were to say what reforms actually were founded on the somewhat grudging provisions of Regulation I. of 1793.

The criticisms to which this Regulation gave rise had the effect of stimulating inquiry into the general question of land tenure, and at the same time experience was accumulating from other parts of the country. The next development was what is commonly called the Rayatwari Settlement, which took its rise in the Madras Presidency. Like the Bengal Settlement, it had its origin in a crude generalization from native custom, aided by a still cruder economic theory. Sir Thomas Munro and the framers of the Madras Settlement, however, sent their sounding-line a good deal deeper than Lord Cornwallis and his advisers had done. Besides, there were many circumstances really differentiating the Madras Presidency and South India generally from the territory over which the Permanent Zemindaree Settlement had been put in force. The Aryan conquerors had never established themselves in the southern portion of India as they did in the parts north of the

Vindhya Hills. There are not many Rajput settlements in South India, and the Brahman colonies which are found there, although organized after the village commune pattern, have not to any great extent imposed their landed system on the aboriginal races. Between the revenue collector and the cultivating serf there were no such intermediate interests as were found to exist in North India, and at the same time the revenue collector under the Moguls was more completely aloof from the people than he was in Bengal. He was purely and simply an official, and not the representative of an old native chieftainship. Accordingly, just as the Bengal officials of 1793, having to deal with what we may call mediatized native chiefs, mistook them for squires *à l'Anglaise*, so the Madras officials, a few years later, mistook the whole occupying agricultural class, village communes, and cultivating serfs, for peasant proprietors, paying a rentcharge to the State. Sir Thomas Munro and his advisers were a step nearer to the truth than Lord Cornwallis and his counsellors, because the village communes certainly had something which might fairly be described as proprietary rights, and the serfs had practically something like tenant-right. Neither the members of the village communes nor the serfs were peasant proprietors, nor were the Zemindars lords of manors; but the later error was a little less remote from the truth than the earlier. The result was that the persons in possession of particular pieces of land were recognized as the direct tenants of the State, and the land revenue or State rentcharge was assessed upon them individually. That is, such was the intention: though, owing to the peculiar condition of Indian society, the intention was not always carried out in practice. The family group, as has been already explained, is the typical unit of ownership in communities such as those which inhabit India, whether of Aryan or non-Aryan race. As Sir Henry Maine pointed

out (*Village Communities*, Lectures ii., iii., and Appendix I.), the tendency of our legal administration has been to crystallize native custom. We have also, as is very ably pointed out by Mr. Nelson (*Scientific Study of Hindu Law*), in many instances imposed Brahmanical law upon non-Aryan native communities, owing to misconception of the scope of that law and of the extent of its acceptance among the people. One result of this course of administration has been that family groups have been stereotyped as units of ownership, and that Brahmanical legal views concerning the family group have been forced upon non-Aryan families in certain instances. Hence, among other consequences, we find the holdings which the Southern Indian system presumes to be individual actually held very largely by family groups in common. How this affects the collection of the land revenue and the distribution of the assessment is too technical a question to discuss in a mere outline sketch.

I now pass on to the third development of the Indian Revenue system. The territory of Hindostan proper—the Doab, or space between the Ganges and Jumna, the territory of Rohilkund and the districts beyond the Ganges and Jumna, in which are situated the cities of Delhi, Agra, Muttra, Allahabad and Benares—came under British rule later than Lower Bengal and the Madras Presidency, and within the last hundred years. It is not part of my present plan to enter upon the history of these territorial acquisitions, and therefore I am simply called upon to record that during the period in question our administration had time to push their investigations further than Lord Cornwallis or Sir Thomas Munro had done. The result was the discovery that the village commune was the recognized unit of ownership, at least in Upper India; and that fact has influenced our revenue administration to the present day. With one exception,

it may be said to be the last word in Indian Revenue Law. That exception was the recognition, in Oudh, of the intermediate tribal chieftains mentioned above, or of their representatives, or substitutes under the Mahomedan *régime*, as will be seen by referring back (p. 7). The recognition of these functionaries virtually restored, if not the old Aryan hierarchy, at any rate so much of it as had survived the Mahomedan conquest.

It is no part of my plan to describe the village commune in detail. It would take a volume to do it, and volumes have been already written on the subject. Suffice it to say that the joint ownership of the village commune is exercised in a great variety of ways, some of which closely resemble communism, while those at the other extreme present points of likeness to the dividend system of a joint-stock company. In a great number of instances the Aryan caste monopoly has been broken into, and communities have been formed consisting of low caste men who in very ancient days would have been slaves. In some cases men belonging to low castes, or to the Vaisya (which, though nearly pure Aryan, was not originally a landholding caste), have acquired rights in Brahman and Kshatriya villages, concurrent with those of the Brahman and Kshatriya, the original landholding castes. Again—chiefly, though not altogether, under the British *régime*—there has grown up a class of free cultivators, tenants in very nearly the English sense of the word, but enjoying two at least of the familiar ‘three F.’s—fixity of tenure, and fair rents. The right of sale is not so well established, but seems on the way to become so. These tenants are legally termed tenants with right of occupancy. Finally—and this applies to all parts of India—there is gradually growing up a class of tenants by contract. I suppose I need hardly add that the law of British India does not recognize slavery, though native

custom still fails in a great measure to discriminate between the status of a labourer and that of a slave.

It remains only to state in a few words the history of the tenants with right of occupancy. These are, on the one hand, members of village communes who have lost their proprietary right or failed to establish it; and, on the other hand, large classes of persons who, under native rule (Hindu or Mahomedan), would have been virtually slaves, but under British rule have had personal freedom secured to them, while the benefits of permanent connexion with the soil have not been taken away.

There need be no difficulty in understanding the status of the ex-proprietor who has become a tenant with right of occupancy. Under all systems of ownership, landlords often reserve to themselves portions of land as home-farms and demesnes. The Indian village communes had reserves of a nature analogous to this. The right to collect what (for want of a more accurate term) we must call *rent* originally went with the enjoyment of these reserved lands, but gradually became separable from it. When the Aryan feudal system was partially broken down by the Mahomedan conquest, this portion of the system was affected as well as the rest. In Lower Bengal the Zemindars, who were partly Mahomedan revenue collectors and partly tribal chiefs who had been 'mediatized' as described above, had taken the collection of rent out of the hands of the village communes, but had not meddled much with the reserved lands. The Zemindars, as we have seen, were turned by Lord Cornwallis into as good an imitation of British landlords as he could construct out of the materials. Luckily there were among his council some men who saw that there were rights which were not included in what Lord Cornwallis understood to be those of the Zemindars. Regulation I. of 1793 contained reservations of the rights of 'cultivators,' and ere long it was found necessary to

investigate these rights, and formulate them more particularly. It would be beyond the limits of this Paper to work out the question in detail. Suffice it to say that the most convenient plan was found to be this:—All cultivators who at the time of the Permanent Settlement were found to have occupied at a rent not subject to variation were held to be dispossessed proprietors, and to be entitled to hold for ever at the rent payable at the time of the Permanent Settlement. Twenty years' occupancy at an unvaried rent by the claimant or his predecessor in title was fixed as the period of prescription; but the presumption of ownership could be rebutted. Practically, this is now the law of Lower Bengal. A tenant whose rent has not been altered for twenty years is presumed (in the absence of rebutting evidence) to have been in occupancy since before the Permanent Settlement, and to have come into occupancy as a dispossessed member of a village commune.

In the part of India officially known as the North-west Provinces—geographically, nearly coincident with Hindostan proper—and to some extent in the Panjab, certain members of the village commune became tenants with right of occupancy, instead of co-proprietors, through the action of our own Government. In every village commune there were certain leading or head men, from whom it had been usual for the native receivers of revenue to take payment. They merely acted as agents on behalf of the rest of the community; but they were mistaken for the real owners. The mistake was analogous to that made by Lord Cornwallis; but not so far reaching in its consequences. The claims of the remaining members of the commune became limited to a right of occupancy in the land directly in their possession. Many of them hold at a rent subject to revision, as will be seen.

There is a very large class of tenants with right of

occupancy, but whose rents are liable to variation—either reduction or enhancement—at periods fixed by law, generally about ten years. In their case the period of prescription (by the claimant or predecessor in title) is twelve years,¹ and the rent need not have been unvaried. Occupation of the same land for twelve years is generally sufficient. Tenants coming under this description are either claimants of the quit-rent tenure described above, who have just come short of making out a full case, or they are dispossessed members of village communes, mentioned in the last paragraph, or they are serfs whose status has been raised by the operation of economic and legal causes. We saw above that the serf of a family group or of a village commune enjoyed a certain amount of personal freedom on condition of not quitting the estate, and of rendering his dues punctually and fully. If, for any reason, the condition of any one of these praedial serfs became intolerable, he usually ran away, and offered his services to another commune. Sometimes the labourers on a communal estate would desert in a body. In these cases there was often a *levée en masse* of the village freemen, who descended upon their neighbours' lands to recapture the fugitives; and such expeditions often terminated in hard fighting and bloodshed. Over-population was never 'a social disease in India until the days of the *pax Britannica*. It is not so even now in most parts of the country, though there are congested districts; and it was the interest of the village commune, the family group, or the individual landowner to keep the labourer on the estate, by good treatment usually, but by force, if force was needed. Hence, when the *pax Britannica* had confirmed personal freedom to the praedial serf, on the one hand, and on the other had caused congestion in certain districts, competition arose among

¹ An arbitrary period of prescription, suggested by the civil law of limitation.

labourers for land, instead of the old competition among landowners for labour. The British authorities, finding that certain men had always occupied certain land, concluded that they had some sort of prescriptive rights in those lands, and the gradual spread of economic ideas led to the legalization of a periodical assessment of rent. Originally, as we have seen, the name rent was wholly inapplicable to the payments made by the *praedial* serfs; but when they became free cultivators, then rent arose as an economic and legal necessity.

The class of twelve years' right of occupancy tenants may be said to have arisen generally in these ways. This class is found all over North India, in the Panjab and North-west Provinces, as well as in Bengal, Bihar, and Orissa. The twenty years' quit-rent tenants are only found in the provinces affected by the Permanent Settlement. In the provinces of Rayatwari Settlement, where the cultivators are peasant proprietors, paying revenue direct to Government officers, no tenants with right of occupancy are found, for obvious reasons. The entire agricultural population having been assumed to consist of peasant proprietors, the status of tenant could not arise, except by contract between the occupying proprietor and some person deriving a tenancy from him. Such contract tenancies do exist, and they are also found in the provinces of the Permanent Settlement (Bengal, Bihar, and Orissa), and even in the provinces where the village communes have survived. In these the contract tenant may be found holding under the occupancy tenant, as well as direct from the landowner, whether a village commune, a family group, or an individual.

I shall not make any attempt, in this paper, to describe what is called a Settlement—the process of assessing and apportioning the land revenue. My object has been to give an outline of the legal history of our revenue systems,

and not to enter upon purely fiscal details. I think, in what I have said above, I have sufficiently shown that our revenue system is intimately associated with indigenous archaic law, and therefore that the knowledge of it is an aid to the study of the law itself.

NOTE.—I have adhered generally to Sir William Jones's system of transliteration of Indian names, in which the vowels (with the exception of short *a*) have the Italian value, and the consonants the English value. But in the names of places, and as regards the well-known word 'Zemindar,' 'Mogul,' and perhaps one or two others, especially 'Mahomedan,' which is almost an English word, I have used the old fashioned transliteration.

EDWARD STANLEY ROBERTSON.

ON THE FOCAL CIRCLES OF PLANE AND SPHERICAL CONICS.

OF all the purely geometrical methods which have been used to exhibit or to demonstrate the fundamental properties of the plane conic sections, perhaps the most elegant is that which consists in the use of a sphere inscribed in a right cone of which the plane conic is a section. This method was indicated, though not quite fully stated, 130 years ago, by Hugh Hamilton, a distinguished Irish Geometer.¹ It has been developed, and its history given in Mr. Charles Taylor's *Geometry of Conics* (Cambridge, 1881). It will therefore be unnecessary for me to do more than briefly to describe it, and to mention some of the results to which it leads, so as to enable the reader to enter more readily upon the consideration of what follows. This combination of the right cone, the inscribed sphere, and the plane, will be found to suggest geometrical properties and trains of mathematical investigation which, I believe, have not yet been distinctly stated. I propose in this Paper to show how this method not only brings into view the focal circles of the plane conic sections, but adapts itself to the proof of propositions relating to similar circles connected with the spherical conics, and indeed of many other fundamental properties of those curves. The foci of the conics are only focal circles reduced to points by the vanishing of their radii. Of these

¹ See Hamilton's *Conic Sections*, Book ii., prop. xxxvii. Hugh Hamilton was elected Fellow of Trinity College, Dublin, 1751; Professor of Natural

Philosophy, 1759; F.R.S.; Dean of Armagh, 1768; Bishop of Clonfert and Kilmacduagh, 1796; translated to Ossory, 1799. Died Dec. 1, 1805.

Focals, as we may call them for shortness, different definitions have been given, both analytical and geometrical. It was observed long ago that the focus of a conic section might be defined analytically as a point such that its distance from any point on the curve is a rational function of the abscissa of the curve measured on its principal axis. This property suggested the inquiry: By what conditions would a circle be limited, if the length of a tangent drawn to it from any point P upon the conic were a rational function of the co-ordinate? The solution of this problem leads to the result that the length of PT , the tangent to the circle which fulfils the required conditions, will bear to the perpendicular let fall from P upon a certain fixed line a constant ratio which will be equal to the eccentricity of the conic. The centre of the circle will lie upon the principal axis of the conic, and the fixed right line may be called its corresponding directrix. We may regard this as the geometrical definition of the focal circle of a plane conic. It will be found that the method which we are considering brings the focals both of plane and spherical conics into a group generated by a continuous and easily-conceived process. It will also be seen that, as many important properties of the plane conic sections depend upon the relation which exists between the focus and directrix, so analogous relations exist between each focal circle and the particular directrix which corresponds to it.

I am inclined to think that, if geometers had been content to consider only one inscribed sphere in the construction of which I have been speaking, the method would have received greater development. An inscribed sphere, with increasing radius as it comes down from the vertex of the cone, would generate in succession all the focals of the plane conic. Beginning by touching the plane at a focus of the conic, it would assume different positions in which the focal circle would deserve remark—as where it

osculates the conic at the extremity of its principal axis, or where it becomes the circle described with the axis minor of the ellipse as diameter. It would then generate like focals in an inverse order, until, after reaching the other focus, it would cease to meet the plane.

The reader will observe that I have only dealt with the case of a right cone having an elliptic base. I have done so for two reasons. I desired to avoid prolixity. Any mathematician will be able to adapt the results here set before him to the cases of the parabola and hyperbola. I also had reason to consider that, in the application of this cone-and-sphere method to the spherical conics, it was sufficient to consider a cone with an elliptic base, as there is but one species of sphero-conic.

FOCAL CIRCLES OF PLANE CONICS.

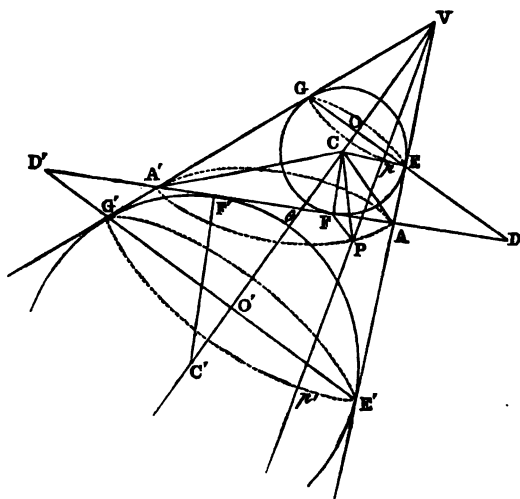


Fig. 1.

1. If a right cone enveloping two spheres be cut by a plane APA' , which touches both of them, as in (fig. 1), the

section of the cone by the plane will be a conic having the points of contact F and F' for its foci. (See Salmon's *Conics*, Art. 367).

Now if the plane which cuts the cone instead of touching the two spheres intersects them in two circles (fig. 2), it follows at once in the same manner that the sum (or difference) of the tangents drawn from any point on the conic to the two circles will be constant, and equal to the common tangent to the two spheres. Thus we are presented at

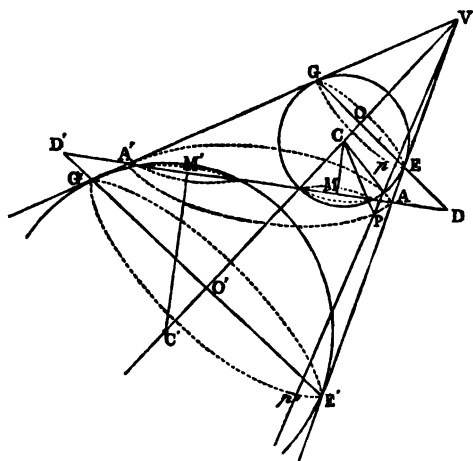


Fig. 2.

once with the theorem that 'the locus of a point such that the sum (or difference) of the tangents drawn from it to two given circles may be constant will be a conic section.' (See Taylor's *Conics*, p. 210.)

Circles thus related to a conic section may be called *Focal Circles* of the conic; and as in the case when the plane touches both spheres the lines in which it meets the planes of contact of the cone and spheres are the directrices D and D' of the conic, so in the case where it meets

the spheres in circles we may still call its lines of intersection with the same planes of contact the *Directrices Corresponding to the Focal Circles*.

The sum (or difference) of the tangents drawn from a point on the conic to two focal circles is analogous to the major diameter, and the distance between the centres of the circles answers to the distance between the foci. Thus the distance (δ) between the centres of two focal circles is to the sum (or difference) of the tangents as the distance between the foci of the conic is to its major diameter.

$$\text{For} \quad \frac{\delta}{GG'} = \frac{\delta}{CC'} \cdot \frac{CC'}{GG'} = \frac{\cos \theta}{\cos V};$$

where θ is the angle CC' makes with the plane of the section, and V is the semi-vertical angle of the cone.

But obviously $MM' : AA' :: \cos \theta : \cos V$, for $MM' = CC' \cos \theta$, and $AA' = GG' = CC' \cos V$.

Hence it follows that

Distance between centres of two focals
Sum (or difference) of tangents to them = eccent. of conic.

Cor. 1.—If the sum of the tangents is equal to the distance between the centres of the circles, the locus will be a parabola.

[For the distance between the centres of the circles is $CC' \cos \theta$, where θ is the angle between CC' and the plane of the conic; and GG' , the common tangent to the two spheres, is equal to $CC' \cos V$, where V is the semi-vertical angle of the cone. Therefore $\theta = V$, and the plane of the section is parallel to GG' .]

Cor. 2.—The difference of the tangents drawn from the extremities of the axis major to either of the two focal

circles is equal to the distance between the foci of the ellipse.

[For $A'G - AE = FF'$.]

2. The tangent drawn from any point of the conic to a focal circle bears to the perpendicular from the same point on the corresponding directrix a constant ratio, viz., that of the eccentricity of the conic to unity.

For if t be the tangent from P to the focal, and p the perpendicular on the corresponding directrix, we have

$$t \cos V = p \cos \theta = \varpi,$$

where ϖ is the perpendicular from P on the plane of contact GED . Hence

$$\frac{t}{p} = \frac{\cos \theta}{\cos V} = e; \quad (\text{by 1})$$

and conversely 'the locus of a point, such that the tangent from it to a given circle bears a constant ratio to the perpendicular from it on a fixed line is a conic section, of which the given circle is a focal, the given line is the corresponding directrix, and *the eccentricity of the conic is equal to the given ratio of the tangent to the perpendicular.*'

This being premised, the following properties of focal circles can be immediately deduced:—

(a) Any chord AB of a conic, touching a focal circle at C , and meeting the corresponding directrix at D , is cut harmonically in $ACBD$.

[For, let fall AP and BQ perpendiculars from A and B upon the directrix. Then

$$\frac{AC}{BC} = \frac{AP}{BQ} = \frac{AD}{BD}.$$

Hence AB is cut harmonically in C and D .]

(β) If AB and $A'B'$ be any two chords touching a focal circle at C and C' , the lines AA' , BB' , CC' meet on the corresponding directrix.

[For, let AA' meet CC' at R . Then, since the angles ACC' and $A'C'C$ are equal, it follows that

$$\frac{AR}{AC} = \frac{A'R}{A'C'} \quad \text{or} \quad \frac{AR}{AP} = \frac{A'R}{A'P};$$

therefore R is a point on the directrix. Similarly, BB' meets CC' on the directrix.]

(γ) As a particular case of (β) it follows that, if from any point A of a conic two tangents AB and AB' be drawn to a focal circle, the tangent at A to the conic passes through the point of intersection of BB' and CC' , which is a point on the directrix.

We have therefore a simple method of drawing a tangent at any point of the conic when we are given one of its focal circles.

(δ) The polar of any point on the directrix with reference to the conic is identical with its polar with reference to the focal circle; and the pole of the directrix with reference to the conic coincides with its pole with reference to the circle: or the curves have *double contact* at the points (real or imaginary) where the directrix meets them.

(ε) The intersection of the tangents at A and A' , the intersection of the tangents at B and B' , the intersection of the lines AB and $A'B'$, and of the lines AB' and $A'B$, and the points of contact of tangents from R to the circle, are all on the same right line, viz., the polar of R with reference to the conic or focal.

Thus, of the three pairs of lines joining the four points $ABA'B'$, one pair meets at R on the directrix, and the other two pairs intersect on the polar of R .

Although my main object was to illustrate a geometrical method of treating a series of propositions, I may be allowed to observe that this combination of the right cone and sphere immediately supplies all the materials required for the analytical discussion of the focal circles of the plane conic sections. For, if a and b be the semi-axes of the ellipse APA' , r the radius of a focal, and m and d the distances of its centre and the corresponding directrix from the centre of the conic, then, having from fig. 1,

$$AG^2 = (a + m)^2 - r^2, \quad \text{and} \quad AE^2 = (a - m)^2 - r^2,$$

we may write

$$AG - AE = 2c, \quad (1)$$

and

$$\frac{AG}{AE} = \frac{d + a}{d - a}. \quad (2)$$

Equation (1) gives us $\frac{m^2}{c^2} + \frac{r^2}{b^2} = 1$, which is in fact the analytical definition of a focal, showing how its radius depends upon the place of its centre; and equation (2), gives

$$(d - m)(a^2 - dm) = dr^2,$$

from which, eliminating r , we obtain

$$d = \frac{m}{e^2}, \quad \text{and} \quad PT [= e(d - x) \text{ by } \S 2] = e \left(\frac{m}{e^2} - x \right).$$

FOCAL CIRCLES OF SPHERICAL CONICS.

3. The lines CF and CC' (fig. 1) are the focal lines of the cone standing on the base APA' , and having C for its vertex.

For we have $CF = Cp$, and $PF = Pp$, and CP common to the two triangles CFP and CpP ; therefore the angles FCP and pCP are equal, and $C'CP + FCP = C'Cb = 90^\circ + V = ACA'$, V being, as before, the semi-vertical angle of the cone. Hence the cone $C.APA'$ meets the sphere EFG in a spherical conic, of which F is one focus, and the line CC' passes through its other focus.

Similarly $C'C$ and $C'F'$ are the focal lines of the cone, having C' for its vertex and the conic APA' for its base.

N.B.—Again, if a plane be drawn through C and D perpendicular to the plane AVA' , making an angle θ ,

with the plane of the conic APA' , and if PQ be a perpendicular from P on it; then

$$\sin FCP = \frac{PF}{PC} = \frac{Pp}{PC}; \text{ and } \sin PCQ = \frac{PQ}{PC}.$$

But if PR be a perpendicular from P on the plane of contact GE , we have

$$\frac{PQ}{PR} = \frac{\sin \theta_1}{\cos \theta}, \text{ and } \frac{PR}{Pp} = \cos V;$$

therefore
$$\frac{\sin FCP}{\sin PCQ} = \frac{1}{\sin \theta_1} \cdot \frac{\cos \theta}{\cos V} = \frac{e}{\sin \theta_1}. \quad (\text{by Art. 1})$$

Now if we call the plane through C and D perpendicular to the plane AVA' the *Director Plane* of the cone $C.APA'$, and the great circle in which it meets the sphere the *Director Arc* or *Directrix* of the spherical conic, it follows that the angle FCP is the angular distance of the focus F of the spherical conic from a point on the curve, and that the angle PCQ is identical with the perpendicular arc from the same point on the director arc of the curve. Denoting the former by ρ and the latter by ϖ , we have

$$\frac{\sin \rho}{\sin \varpi} = \frac{e}{\sin \theta_1} = \text{constant};$$

or since $\cos \theta = \sin FCC' = \sin 2\gamma$, where 2γ is the angular distance between the foci of the spherical conic, and $\cos V = \sin ACA' = \sin 2\alpha$, where 2α = the major diameter of the same conic, and θ_1 = the angle between the plane APA' and the director plane = the angular distance between F and the pole of the director arc = δ , we have

$$\frac{\sin \rho}{\sin \varpi} = \frac{1}{\sin \delta} \cdot \frac{\sin 2\gamma}{\sin 2\alpha}.$$

Cor. 1.—If a sphero-conic be projected from the centre of the sphere upon a plane touching it at a focus, the plane curve will be a conic, of which the point of contact will also be a focus, and its directrix will be the projection of the director arc of the sphero-conic.

Cor. 2.—The pencil $C.A'FAD$ is harmonic.

4. Now, let the plane APA' meet the sphere (fig. 2) in a small circle, and let PT be a tangent to this circle from any point P of the conic; then, using the same notation as before, we have

$$\sin TPC = \frac{PT}{PC}, \text{ and } \sin PCQ = \frac{PQ}{PC};$$

but
$$\frac{PQ}{PR} = \frac{\sin \theta_1}{\cos \theta}, \text{ and } \frac{PR}{Pp} = \cos V.$$

Therefore

$$\frac{\sin TCP}{\sin PCQ} = \frac{1}{\sin \theta_1} \cdot \frac{\cos \theta}{\cos V} = \frac{e}{\sin \theta_1} = \text{constant}.$$

Hence, since the angle TCP is identical with the arc drawn on the sphere from the point where PC meets the sphero-conic, to touch the small circle, and since the angle PCQ is the arc drawn on the sphere from the same point perpendicular to the director arc, it follows that, '*if the sine of the tangent arc, from a variable point to a fixed small circle on a sphere, bears a constant ratio to the sine of the perpendicular on a fixed great circle, the locus of the point will be a sphero-conic.*'

We shall term the small circle a *Focal Circle* of the conic, and the great circle its *Corresponding Director Arc* or *Directrix*.

Denoting the tangent by τ and the perpendicular by ϖ , we have for a focal circle and its corresponding directrix

$$\frac{\sin \tau}{\sin \varpi} = \frac{e}{\sin \theta_1}.$$

But further, since the angles PCT and PCp are equal, the sum of the angles PCT and PCC' = the sum of PCp and PCC' , that is, to $90^\circ + V$, which is constant. Thus CC' is obviously a focal line of the cone C , APA' ; consequently we obtain for the sphero-conic the theorem that *the sum of the two arcs, of which one is drawn from any point on the curve to the remote focus, and the other touches a focal circle, will be constant.*

Again, if the sphero-conic be projected upon the plane of one of its focals, or upon the plane touching the sphere at the centre of one of its focal circles, the projection of that focal will be a focal of the plane curve into which the sphero-conic will be projected, and the director arc corresponding to the focal of the sphero-conic will be projected into the directrix of the focal of the plane conic.

5. The cone having C for its vertex, and the conic APA' for its base, is supplemental to the cone, having F for its vertex and the circle GE for its base.

For, draw pQ parallel to PC , then PC is perpendicular to Fp ; therefore pQ is perpendicular to Fp . But as pQ is also perpendicular to the element at p of the circle of contact GpE , consequently PC is perpendicular to the plane which touches the cone having F for vertex and the circle GpE for base, along the side Fp .

Any tangent plane to an oblique cone with a circular base makes, with the plane of the base and the right line drawn from the vertex to the centre of the base, angles the sines of which are in a constant ratio.

For, drop a perpendicular P from the centre of the base

on the tangent plane, and let B be the line from the vertex to the centre of the base, and R the radius of the base; then sine of angle (β) between tangent plane and plane of base is $\frac{P}{R}$, and sine of angle (α) between tangent plane and line from V to centre of base = $\frac{P}{B}$.

Therefore $\frac{\sin \alpha}{\sin \beta} = \frac{R}{B}$, which is constant.

This theorem is in fact supplemental to one which has been stated in Art. 3.

The following properties of the focal circles of spherical conics may be deduced exactly as the corresponding properties of the focal circles of plane conics have been arrived at in Art. 2 :—

(a) Any chord AB of a spherical conic touching a focal circle at C , and meeting the corresponding directrix at D , is cut harmonically in A, B, C, D .

[For $\frac{\sin AC}{\sin BC} = \frac{\sin AP}{\sin BQ} = \frac{\sin AD}{\sin BD}$, etc.]

(β) If AB and $A'B'$ be two chords of a sphero-conic, touching a focal circle at C and C' , the arcs AA', BB', CC' meet on the corresponding directrix.

[This and the remaining properties follow exactly as pointed out in Art. 2.]

It would be found convenient to denote focals as *homæothetic* or *antithetic*, according as their centres lie at the same side or at opposite sides of the centre of the conic to which they belong. We might then say that the sum or difference of the arcs drawn from any point on a sphero-conic to touch two of its focal circles will be constant, according as they are antithetic or homæothetic.

A Geometer who has read no new Mathematics for more than twenty years, and has forgotten a great part of what he once knew, need not be surprised if his exercises, jotted down in a desultory way to beguile hours of pain and weakness, in a foreign country, without books of any kind to refer to, or any help from friends, are found to contain nothing that has not been anticipated. Even if that may be said of the part of this Paper which relates to the focals of the plane conics, I retain a hope that some novelty may be recognized in the section which treats of the sphero-conics and their focals. In connexion with that part of my subject I have traced, and mean to discuss elsewhere, some of the consequences flowing from a proposition which holds, in the theory of these curves, a place analogous to that which belongs to the definition of a focal mentioned in the first paragraph of this Paper. I mean that I have succeeded in formulating and solving the question which, in the theory of the sphero-conics, is exactly similar to that which has been proposed and answered for the plane conics : viz., By what conditions would a circle be limited, if the length of a tangent drawn to it from any point upon the plane conic is always a rational function of the abscissa?

I gladly acknowledge that in the preparation of this Article for HERMATHENA I have obtained valuable assistance from Mr. Thomas Preston, who has extracted the materials for it from my note-books, and put them in order.

C. LIMERICK.

June 18, 1888.

HIPPOLYTUS AND HIS 'HEADS AGAINST
CAIUS.'

THE extant remains of the writings of Caius, and the scattered notices of him that occur in ancient writers, are so few and meagre, that they serve to raise, rather than to solve, questions concerning him. It may be briefly said, that hardly anything has hitherto been known of him with certainty, beyond the facts that he flourished about the year of our Lord 200, and that he wrote a *Dialogue* against Proclus, a Montanist leader. I believe, therefore, that many students of the early history of the Church, and of the New Testament Canon, will welcome an accession to the scanty materials out of which the existing accounts of him have been constructed. I propose, accordingly, to give in this Paper a few passages which I have recently lighted on, purporting to be derived from a work in which his contemporary, Hippolytus, controverted his teaching concerning the authenticity of the Apocalypse of St. John.

These passages, five in number, are embodied in the inedited Syriac *Commentary on the Apocalypse, Acts, and Epistles*, of Dionysius Barsalibi, the learned Jacobite divine of the twelfth century from whose *Commentary on the Gospels* investigators have learned many valuable facts—notably, the existence of Ephraim's *Commentary on the Diatessaron of Tatian*, recently confirmed so signally by Moesinger's publication of a Latin translation of the Armenian version. Of each of the five the method is the same. An objection is briefly stated as raised by Caius against some point in which he conceived that the Apocalypse was at variance with the teaching of the Gospels and of St. Paul; and the

arguments of Hippolytus, in reply, are given at some length.

Now, of the fragments preserved for us by Eusebius of the *Dialogue* of Caius, the principal is one on which much dispute has arisen—whether it refers to the canonical Apocalypse. It is as follows:—

‘Cerinthus, by means of revelations purporting to have been written by a great Apostle, attempts to impose on us marvels which he pretended were shown to him by angels; and says, that after the resurrection the reign of Christ is to be on earth, and that men are to inhabit Jerusalem in fleshy bondage to lusts and pleasures; and being an enemy to God’s Scriptures, he declares, in his desire to deceive, that the space of a thousand years is to be spent in a marriage feast.’ (*Hist. Eccl.* iii. 28.)

From these words the suspicion, *prima facie*, arises, that Caius may have rejected the Apocalypse from the Canon, and ascribed it to the arch-heretic Cerinthus. Yet, if the passage stood alone, this suspicion might well be set aside. The carnal millennium it describes is utterly unlike the millennium of our Apocalypse; and it seems, besides, impossible that anyone could have imagined Cerinthus to be the author of a book of which the Christology differs so fundamentally from his. But Eusebius, though he does not appear himself to have understood Caius to refer to the Apocalypse of the Canon, cites from Dionysius of Alexandria a statement, that ‘some of those before him’ had rejected the Apocalypse as the work, not of St. John, but of Cerinthus; the grounds of rejection being much the same as those alleged by Caius, and expressed in similar, but grosser terms. The obvious inference seems to be, that Dionysius is here referring to Caius, and that he believed the ‘revelations’ which Caius ascribed to Cerinthus to be the Book of the Revelation, usually received in the Church as written by St. John. And in support of this inference

the fact is adduced that Ebediasa, a late Syriac writer (*circ.* 1300), in his *Catalogue*, mentions, among the works of Hippolytus, his ‘*Heads against Caius*.’* What more likely (it may be asked) than that the point of controversy between these contemporaries may have been the authenticity of the Book which the one appears to have called in question; while the other, as his extant works attest, accepted it with reverence, and studied it with sedulous care?

Bearing these particulars in mind, we shall better be able to estimate the evidence yielded by the passages of which I proceed to give a translation.†

I. The first is as follows:—

[*A great mountain was cast into the sea, and the third part of the sea became blood,—Rev. viii. 8*]. ‘On this, Caius the heretic objected to this revelation, and said that it is not possible that these things should be, inasmuch as *as a thief that cometh in the night*, so is the coming of the Lord [1 Thess. v. 2]. Hippolytus of Rome answered him, and said that, in like manner as God wrought signs such as these in Egypt, so is He to work when Christ appears. And those that [were wrought] in Egypt were partial, inasmuch as a part of the people was subjected there; but these are to be general,‡ before the judgment, on all the world. Accordingly, by the revelation John declared that there are to be plagues before the judgment, as though for the avenging of the righteous and retribution on the unbelieving, that when involved in these they may not trouble the faithful. So also the Lord said, *There shall be in that day tribulation*

* *Ap. Assem., B. O.*, t. iii., p. 15.

† Barsanubius quotes Scripture with great laxity, following the Peshitto in the main, but with many traces of familiarity with the seventh-century versions—the Harkleian in the New Testament and the Syro-Hexaplar in the Old. His citations from the Apoca-

lypse agree so often and so closely with the version commonly printed in Syriac Bibles, as to prove that he knew that version; but he diverges from it freely now and then. In my translation I have endeavoured to represent accurately his method of citation.

‡ See Supp. Note (1), p. 418.

such as has been none like it [St. Matth. xxiv. 21]; and Joel, *I will shew signs in heaven and on earth, blood and fire and vapour of smoke. The sun shall be turned into darkness and the moon into blood, before the day of the Lord come* [Joel ii. 30, 31]; and Amos, *To what end is the day of the Lord for you, for it is dark and not light? in like manner as if thou fleddest from a lion and a bear met thee, or one leaned his hands on a wall and a serpent bit him* [Amos v. 18, 19]. The text, that *the day of the Lord cometh as a thief*, signifies as regards the unbelieving that they are darkness, inasmuch as the faithful are *children of light, who walk not in the night* [St. John xi. 10; xii. 35, 36; Eph. v. 8]. Accordingly, in Egypt this type was completed; for the Egyptians had darkness, but *the Hebrews had light* [Exod. x. 22, 23].

II. The second goes on much the same lines—

[*The third part of the sun was smitten, and the third part of the moon, and the third part of the stars; so as the third part of them was darkened,—Rev. viii. 12*]. ‘On this Caius said that, just as in the Flood the heavenly bodies were not taken away and suddenly submerged, thus also is it to be in the end, as it is written [St. Matth. xxiv. 37]; and Paul says, *When they shall say, Peace and safety, destruction shall come upon them* [1 Thess. v. 3]. But Hippolytus says, in reply to this objection of the heretic: Before the Flood there was none of these signs, inasmuch as the Flood was partial; and the heavenly bodies were not removed, inasmuch as the general end had not arrived: but when *heaven and earth* are about to *pass away* [St. Matth. xxiv. 35], it must needs be that by little and little their splendour shall perish. And to this Joel testifies: *Before him verily the earth shall be confounded and the heavens shaken, and the sun and moon shall be darkened, and the stars their light shall set* [Joel ii. 10]. And our Lord said, in the Book of Luke, *And there shall be signs in the sun and moon and stars, and on the earth distress of nations, and the powers which are in*

heaven shall be shaken [St. Luke xxi. 25, 26]. And as to this, that He sent a manifest token, it is with regard to the non-perception of the unbelieving that He signifies. And as to the text, *When they shall say Peace, destruction shall come upon them*, it is with regard to the Jews that He signifies, that they expect to possess their land and to be able to live in peace, and forthwith Christ appears and they are put to shame.’

III. The third is not dissimilar.

[*There came out of the smoke locusts upon the earth, and unto them was given power, even as the scorpions of the earth have power,—Rev. ix. 2, 3*]. ‘On this Caius objects, that according to this, the unrighteous are consumed by the locusts; whereas Scripture has said that *sinners prosper* and the righteous are persecuted, *in the world* [Ps. lxxiii. 12]; and Paul, that the faithful *shall be persecuted and the evil shall flourish, deceiving and being deceived* [2 Tim. iii. 12, 13]. But Hippolytus answers him, and says that the faithful, those who are persecuted by the unrighteous, at this period are to have rest, because they have been sealed; but the unrighteous who persecuted the saints, on them comes the plague of locusts; even as the Egyptians were devoured, and the Hebrews were free from the plagues, while they dwelt in one place. Thus the saints in this time are to be in well-being, even as our Lord said, *When these things begin to be, be of good cheer, and lift up your heads, inasmuch as your redemption is nigh* [St. Luke, xxi. 28]; that is, when plagues come on the evil, the righteous have rest. And this, that *evil men deceive and are deceived* [2 Tim. iii. 13], at the present day is coming to pass: that crafty men, who alter the words of the Lord and of the Scriptures after their evil thoughts, that even though at the present day they are *proceeding further*, yet in the end they are to be rebuked: *even as Jannes and Jambres, who withstood Moses* [*ib.* 8, 9], and afterwards were overcome and put to shame.’

iv. The fourth takes up different ground, and (as will presently be shown) contains a further element of interest.

[*And the angels were loosed, which were prepared for seasons and for days, to slay the third part of men,—Rev. ix. 15*]. 'On this Caius says: It is not written that angels are to make war, nor that a third part of men is to perish; but that *nation shall rise against nation* [St. Matth. xxiv. 7]. Hippolytus in reply to him: It is not of angels he says that they are to go to war, but that four nations are to arise out of the region which is *by Euphrates*, and to come against the earth, and to war with mankind. But this that he says, *four angels*, is not alien from Scripture. Moses said, *When He dispersed the sons of Adam, He set the boundary of the nations according to the number of the Angels of God* [Deut. xxxii. 8 (LXX.)]. Since therefore nations have been assigned to angels, and each nation pertains to one angel, John rightly declared by the Revelation a loosing for those four angels: who are the Persians, and the Medes, and the Babylonians, and the Assyrians. Since then these angels who have been appointed over the nations have not been commanded to stir up those who have been assigned to them, a certain bond of the power of the word is indicated, which restrains them until the day shall arrive and the Lord of all shall command. And this then is to happen when Antichrist shall come.'

v. The fifth has a special importance, as touching on the matter of millennarian prediction.

[*And he laid hold on the dragon, the old serpent, which is the Devil, and Satan, and bound him a thousand years, and cast him into the bottomless pit, and shut him up and sealed the bottomless pit upon him, in order that he should not deceive the nations till the thousand years should be fulfilled: after that, he must be loosed a little season,—Rev. xx. 2. 3*]. 'On this Caius the heretic objected: that Satan is bound here,

according to that which is written, that Christ *went up into the strong man's house and bound him, and spoiled his goods* for us [St. Matth. xii. 29]. Hippolytus answered this and said : If the Devil has been bound, how does he deceive the faithful and persecute and plunder men ? And if you say that he has been bound as regards the faithful, how did he draw near against Christ, Him who did no sin ? according to the text, *The Prince cometh and findeth no sin in me* [St. John, xiv. 30*]. And if then he has been bound, how did the Lord teach us to pray, that we should *be delivered from the evil one* [St. Matth. vi. 13] ? and why did he *desire to tempt Simon* and the Apostles [St. Luke, xxii. 31] ? And how was one who had been bound able to *sift* and trouble the disciples [ib.] ? And truly for us *the conflict is not against flesh and blood, but against principalities, and against the rulers of the darkness of this world* [Eph. vi. 12]. If he had been bound, he would not maintain *the conflict*, or *catch away the word which was sown* [St. Matth. xiii. 19], as is said in *the Parable of the Seed*. That He has *bound the strong man*,† the meaning of it is this : that He has rebuked and cast scorn on those who did not come unto Him when He went against the Devil in order to purify them from his bondage and make them sons unto the Father. And this is proved by what He said just after, that *he that is not with me is against me, and he that gathereth not with me, scattereth abroad* [St. Matth. xii. 30]. Accordingly, in the end of times, *the Devil is to be bound and to be flung into the bottomless pit*, when the Lord comes ; even as Esaias hath said, that *the wicked shall be taken away in order that he see not the glory of the Lord* [Isai. xxvi. 10—LXX. (Syr. Hex.)].† And the number of the years is not the number of days, but it represents the space of one day,† glorious and perfect ; in which, when the King comes in glory with His slain, the creation is to shine : according to the text, *The sun shall shine twofold* [marg.,

* See note on v., line 7 (p. 417).

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† See Suppl. Note (4), (3), (2), p. 418.

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sevenfold; Isai. xxx. 26]; while the righteous eat with Him and drink of His vine. *This is the day which the Lord hath made* [Ps. cxviii. 24], which David spoke of. Accordingly, when with the eye of the spirit John saw the glory of that day, he likened it to the space of *a thousand years*; according to the saying, *One day* in the world of the righteous *is as a thousand years* [2 Pet. iii. 8?]. And by the number he shows that day to be perfect, for those that are faithful. But as for what he has said, that *after the thousand years he shall be loosed, and shall deceive the nations* [Rev. xx. 7, 8], it is this: that justly he is to be loosed, and *to be cast into the burning, and to be judged* [*ib.* 10, 12]; with those who from old time were gathered together with him, when he *gathered* the strangers of the kingdom, and *Gog and Magog* [*ib.* 8].'

These passages are conclusive on the main question that has been in dispute concerning Caius. They prove that he refused to admit the Apocalypse as the work of St. John. And they prove that Hippolytus wrote a reply to the arguments by which Caius maintained his opinion. These arguments, we may assume, were put forth in a written treatise; and the purport of them appears to have been (so far as they are reported to us by Barsalibi), that the teaching of the Apocalypse, especially as regards its eschatology, is contradictory to that of our Lord, as reported in the Synoptic Gospels, and of St. Paul. Hence it follows that he rejects its claim, not merely to be the work of St. John, but to be an authentic part of the New Testament Canon. The work of Hippolytus whence Barsalibi derived his knowledge of this controversy was, no doubt, the *Heads against Caius*, mentioned by Ebediasa, which was evidently a distinct treatise from his *Exposition of the Apocalypse and Gospel of St. John*. The passages as they stand in Barsalibi's *Commentary* are, probably, not actual excerpts from the '*Heads*'; they have the air rather of brief summaries of the arguments

on either side: those of Caius (whom it will be observed Barsalibi brands as a ‘heretic’) being stated in the barest, possible form, while those of Hippolytus are given in more detail, yet highly compressed.

The objections of Caius are, as will be seen, those of a somewhat captious critic, and indicate little breadth of scriptural learning or of eschatological conceptions; while the replies of his antagonist are not only fair *ad hominem* retorts, but display a large and thorough knowledge of his subject. But, on the other hand, it is observable that none of the objections at all resembles in character or tone the passage above cited (from Eusebius), in which Caius condemns the spurious ‘revelations’ which he accuses Cerinthus of attempting to pass off as the work of ‘a great Apostle’; nor does any of them; in the remotest degree, answer to the account given by Dionysius of Alexandria of the attack made by certain unnamed writers on the canonical Revelation as being carnal in its promises of millenarian felicity. And this remark applies with especial force to the last of our five passages, which deals with the millennial binding of Satan [Rev. xx. 2, and following verses]. We may assume that if Caius not only denied the Revelation to be written by St. John, but ascribed it to Cerinthus, and interpreted the millennium it foreshows as being one of sensual joys, devised by an ‘enemy of the Church of God who desired to deceive,’ this would be the place where he would put forward that view. If so, it is not to be supposed that Hippolytus would leave so gross a misconstruction unrefuted; and it is, to say the least, improbable that Barsalibi would omit, in his summary of their controversy, to include this which would be obviously beyond comparison the most important and interesting part of it. But, instead of this, we find the point at issue between the two disputants to be merely whether Satan has or has not been *already* ‘bound,’ and therefore whether

it is or is not in accordance with our Lord's teaching to speak of the 'binding' as deferred till the millennium. Besides, the error which in his reply Hippolytus imputes to Caius is, not that he represented the millennium as sensual and unworthy, but merely that he understood the 'thousand years' literally, and not as denoting the spiritual fulness and perfection of 'the day which the Lord hath made.' And Hippolytus does not himself hesitate to speak of the righteous as 'eating and drinking' in that day with the Lord in His glory, without giving any hint that the promise of a grosser 'eating and drinking' had been attributed by Caius to the Apocalypticist.

It is hardly necessary to add that in none of these objections do we find any trace of doubt cast by Caius on the Johannine authorship of the Fourth Gospel. He does not, indeed, expressly cite any Gospel by name in any of these passages, and the texts he uses are from St. Matthew only. But it will be perceived that Hippolytus, in replying to him, once at least cites St. John's Gospel,* evidently as an authority admitted by his opponent; and this fact of course excludes the supposition—for which, indeed, no ground exists—that Caius, like the *Ἀλογοί* of whom Epiphanius tells us (*Har.* xxxi. [li.]), rejected that Gospel as well as the Apocalypse.

In the fourth passage, however, there occurs a point of contact between the views of Caius and those of the *Αλογοί*, as stated by Epiphanius (*ut supr.*), as regards their objections against Rev. ix. 15. It extends, however, only so far as this, that he demurred, as they did, to the idea of angels 'making war';—not, however, because he found it ridiculous, as they professed to do, but because he regarded

* Besides St. Matthew's Gospel, it is to be observed that Caius cites 1 Thessalonians and 2 Timothy, as well as Genesis and the Psalms. Hippolytus

cites (besides these) St. Luke, St. John, and Ephesians; and also Exodus, Deuteronomy, Isaiah, Joel, and Amos.

it as unscriptural (‘it is *not written*’). But it is highly interesting to compare the reply of Hippolytus to this objection, with the arguments with which Epiphanius refutes the *Alogoi*, the substance of which is as follows:— ‘By the four angels he signifies the four nations who dwell by the Euphrates—the Assyrians, Babylonians, Medes, and Persians. . . . That the nations are put in charge of angels, Moses testifies . . . *He set the boundaries of the nations after the number of the angels of God* [Deut., as above]. The *loosing of the angels* implies, therefore, that these nations, after being for a while restrained in the longsuffering of God, are in due time to be let loose, stirred up by their several angels to work vengeance on such nations as have done despite to the saints of God.’ Here, as will be seen, we have every one of the points put forward by Hippolytus reproduced. In both these passages we have the explanation of ‘angels’ as representing nations; in both the same passage of Deuteronomy is adduced in support of it; both name the same four nations; both represent the ‘binding’ as a delay of the vengeance of which these nations are to be the instruments, till God shall command; and the ‘loosing,’ as the signal given for its execution on the oppressors of His people. That Epiphanius here borrowed from Hippolytus there can be no question; and thus we draw from the comparison of these passages a striking confirmation of the ingenious and convincing theory of Lipsius (*Quellenkritik des Epiphanius*), who has made it practically certain that in this part of his *Panarion* Epiphanius (in common with Philaster, in his similar *Treatise on Heresies*) is borrowing from the lost *Refutation of the Thirty-two Heresies* of Hippolytus. The passage, as thus reproduced by Epiphanius, is not indeed identical with that translated by Barsalibi; but the agreement between them, in substance, is complete, and there is a close resemblance in diction (so far as the Syriac version of the

latter passage enables us to judge*). And this is just the sort of affinity to be expected between two passages from different works by the same author.

The results at which the discovery of these passages has enabled us to arrive may be conveniently summed up as follows:—

1. They establish the separate identity of Caius, of whom hitherto so little has been certainly known, that Bishop Lightfoot was able to make out a strong case in favour of the hypothesis that Caius was but Hippolytus under a different name.†

2. They prove that Caius (apparently in a written treatise—possibly his *Dialogue against Proclus*) rejected the Apocalypse from the New Testament Canon, as containing predictions, mainly eschatological, irreconcilable with the words of our Lord and the teaching of St. Paul.

3. They prove that Hippolytus wrote a work in refutation of this view—probably the *Heads against Caius*, named by Ebediasa—

These conclusions are direct and certain; and it may be added as a safe inference from them—

4. That Caius was not (as some have supposed), the author of the Muratorian Fragment, in which the Apocalypse is included in the Canon.

And it seems to follow, with scarcely less certainty—

5. That Caius accepted the Fourth Gospel as St. John's.

6. As a further result, we may add, that the theory of Lipsius concerning the relation between the *Panarion* of Epiphanius and the lost *Refutation of the Thirty-two Heresies* of Hippolytus, has received independent and strong confirmation from our fourth extract.

But the farther question, whether Caius went to such

* See the note appended to the Syriac text of this passage (iv., lines 8–14), below, p. 417, and compare the Greek of Epiphanius with the Syriac.

† See his article in *Journal of Philology*, vol. i. p. 98 (Cambridge, 1868). The weighty arguments adduced in p. 110 ff. retain their full force.

lengths in his condemnation of the Apocalypse as to assign it to Cerinthus, is not decided by any of these extracts. It is, at least, a possible hypothesis that Cerinthus may have written a pseudo-Apocalypse, containing previsions of a millennium of carnal pleasures; and that Caius, in his anti-millennarian over-zeal, may have rejected both Apocalypses, the genuine and the spurious alike;—the former for the reasons assigned in the Barsalibæan extracts, namely, that it contravened those Books of the New Testament which he accepted as beyond question genuine—the latter on the ground stated in his *Dialogue*, as cited by Eusebius, that its promises were addressed to the baser part of man. It is unfortunate that the introduction prefixed by Barsalibi to this work has reached us in such a mutilated state that little light is thrown by it on the points which are in doubt. The fragment that remains of it merely exhibits a brief notice of the opinions for and against the Johannine authorship, the writers mentioned being Eusebius, Dionysius of Alexandria, Irenæus, and Hippolytus. It breaks off in the middle of a sentence in which 'John the Presbyter' is suggested as the possible author.*

The MS. whence I have derived the Syriac text which I print at the end of this article was acquired by the British Museum, in 1830, as part of the Rich collection, and is classed as 'Rich 7185.' It is a small quarto, written on cotton paper, apparently of the fourteenth century. It

* A passage in this Commentary, on Rev. xi. 2, presents points of coincidence with the teaching of Hippolytus concerning Antichrist and *the horn* (Dan. vii. 8), the *abomination of desolation* (*ib.* xi. 31), and the *half-week* (*ib.* ix. 27), in his *De Antichristo* and

Comm. in Daniele, &c. (Lagarde, pp. 13, 21, 32, 152, 160, 166, &c.) But as it does not relate to Caius and his teaching, I do not include it in the present article. I hope, however, to publish it at a future time.

contains a series of brief commentaries on the Apocalypse, the Acts, the Catholic Epistles, and the Epistles of St. Paul, ending with Hebrews. The second and third leaves only are missing, but of the first leaf nearly half has been torn away, vertically. Its *recto* is blank, and its *verso* exhibits the superscription of the book, and the fragment above mentioned of the introduction. The fourth leaf (now numbered 2) begins in the middle of the comment on Rev. iv. 3. The first three chapters, including the Epistles to the Seven Churches, must therefore have been very briefly noticed, or (more probably) passed over without comment. In the Bodleian there is another, and perhaps earlier, copy of the same Commentary, in the MS. Bodl. Or. 560 (small folio, on cotton paper),* which, however, has suffered far more severely from the effects of decay or injury. Several leaves are missing at the beginning, so that more than half the Commentary on the Apocalypse (which in this MS. likewise stands first)† has perished, and of our five passages, the last only survives—that relating to Rev. xx. 2, 3. I have collated it, and find that its variations from the text of Rich 7185 are very minute. I have recorded them, so far as they are of any value, in the notes on that passage.

Except in the cases indicated in the notes, I have been content, in printing these extracts, to follow the MSS., without attempting to correct inconsistencies in the use of the diacritical and other points.

* It was from the Commentary on the Second Epistle of St. Peter in this MS. that Pococke first learned the existence of the Harkleian version (previously unknown, even by name, to European scholars), and derived the extracts from it which he has printed (marking them 'S. A.' = *Syrus Alter*) in the notes to his Syriac text of the Four Minor Catholic Epistles, published in 1630.

† This peculiar order, in which the

Apocalypse precedes the Acts and Epistles, is observed likewise in the Earl of Crawford's MS. of the whole New Testament in Syriac (Syr. No. 2), where it stands between St. John's Gospel and the Acts. I am of opinion that Wetstein's Syriac MS., now in Amsterdam Library (No. 184), of the Acts and Epistles, is part of what was once a complete New Testament containing the Apocalypse similarly placed.

I.

ON REV. VIII. 8.

(Rich 7185, fol. 3r, line 13.)

1 תִּשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל : בְּלֹא
 פִּתְיוֹן וְשִׁלְיוֹן . מִלְּפָנֶיךָ יְיָ אֱלֹהֵינוּ :
 תִּשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל :
 תִּשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל :
 5 תִּשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל :
 מִלְּפָנֶיךָ יְיָ אֱלֹהֵינוּ : מִלְּפָנֶיךָ יְיָ אֱלֹהֵינוּ :
 תִּשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל :
 תִּשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל :
 10 תִּשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל :
 מִלְּפָנֶיךָ יְיָ אֱלֹהֵינוּ : מִלְּפָנֶיךָ יְיָ אֱלֹהֵינוּ :
 תִּשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל :
 תִּשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל :
 15 תִּשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל :
 מִלְּפָנֶיךָ יְיָ אֱלֹהֵינוּ : מִלְּפָנֶיךָ יְיָ אֱלֹהֵינוּ :
 תִּשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל :
 תִּשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל :
 20 תִּשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל :
 מִלְּפָנֶיךָ יְיָ אֱלֹהֵינוּ : מִלְּפָנֶיךָ יְיָ אֱלֹהֵינוּ :
 תִּשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל :
 תִּשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל וְיִשְׁמַע אֶת־הַקּוֹל :

II.

ON REV. VIII. 12.

(f. 3v^o, l. 20.)

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III.

ON REV. IX. 2, 3.

(f. 4r^o, l. 14.)

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IV.

ON REV. IX. 15.

(f. 4v^o, l. 7.)

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 ۱۰۰
 انہی کے لئے

V.

ON REV. XX. 2, 3.

(f. 9v^o, l. 8.)

[illegible]

[illegible]

NOTES.

I. (Line 12). MS. writes ܕܝܣ *dis*.

II. (Line 1). So MS., ; but perhaps we ought to read ܕܝܣܝܠܝܐ].

(Line 6). I have supplied *riḏui* to the plural noun.

III. (Line 12). MS. ܕܝܣܝܠܝܐ.

(Line 15). MS. seems to have had ܕܝܣܝܠܝܐ, but the ܝ is effaced, and ܐ written over it, *prima manu*.

IV. (Lines 8–14). Compare the following from Epiphanius (as above referred to):—Εἰ οὖν τὰ ἔθνη ὑπὸ ἀγγέλους εἰσὶ τεταγμένα, δικαίως εἶπε, Λῦσον τοὺς . . . ἐπεχομένους ἐπιτρέπειν τοῖς ἔθνεσιν εἰς πόλεμον ἕως καιροῦ μακροθυμίας Κυρίου, ἕως προστάξει δι' αὐτῶν ἐκδικίαν γένεσθαι τῶν αὐτοῦ ἀγίων. Ἐκρατοῦντο γὰρ οἱ ἐπιτεταγμένοι ἄγγελοι ὑπὸ τοῦ Πνεύματος, μὴ ἔχοντες καιρὸν ἐπιδρομῆς . . . ἕνεκεν τῆς πρὸς τοὺς ἀγίους ὑβρεως . . . καὶ γὰρ κινούμενοι οἱ ἄγγελοι κινοῦσι τὰ ἔθνη εἰς ὁρμὴν ἐκδικίας.

V. (Line 7). Observe that the quotation from St. John, xiv. 30, follows the reading *εὐρίσκει*, or *εὐρήσει*, for *ἔχει*. This reading is found in some copies, and in early patristic citations, and is given in the margin of the Harkleian version. It is noteworthy, that it is adopted into the text of the New College MS. of that version, supposed to be the result of a recension made by Barsalṭbī, and known as the Codex *Barsalibæus*. I supply the diacritic point under ܕܝܣ from Bodl.

(Line 11). I write ܕܝܣܝܠܝܐ] with MS. Rich: Bodl. has ܕܝܣܝܠܝܐ].

(Line 16). Rich writes ܕܝܣܝܠܝܐ without suffix: I follow Bodl., which agrees with the Peshitto text.

(Line 21). I have given ܕܝܣܝܠܝܐ, but the word is indistinctly written in both MSS., and may perhaps be ܕܝܣܝܠܝܐ.

(Line 23). I supply *ribui* to דבוי, from Bodl. The word דבוי is interlined in Rich, apparently as a correction (the quotation intended being from Isai. xxx. 26). Bodl. interpolates it in the text; a clear case of conflation.

[I have not thought it worth while to record the variations of Rich in transliterating the name *Hippolytus*.]

SUPPLEMENTARY NOTE.

A few points of affinity between the foregoing extracts and the known writings of Hippolytus may be here noted.

(1). The replies to Caius, in I. and II., are paralleled by the discussion of Genesis xlix. 6, in the treatise *De Consummatione Mundi*, c. 19; where the argument turns similarly on the distinction between τὸ μερικὸν and τὸ καθ' ὅλον. (Lagarde, p. 103.)

(2). In V., the explanation of the "thousand years" harmonizes with (in fact, is implied in) the signification given to the "seventh day," in cc. 4-6 of the Chisian fragment of the *Comm. in Danielelem*, and in both places the saying, "one day is as a thousand years," is adduced (with slight variation) (*ib.* p. 153.)

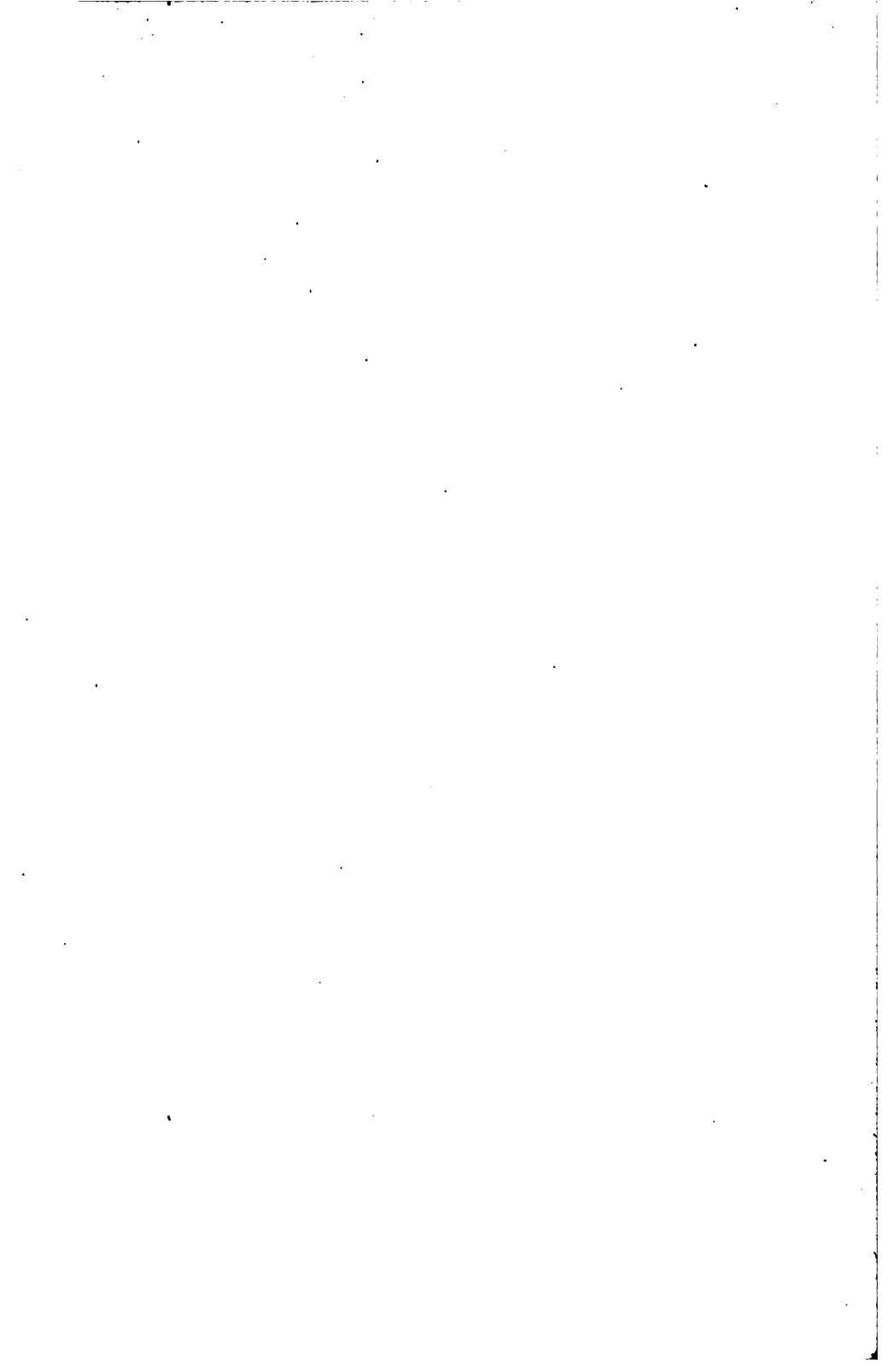
(3). In V., again, we find the same remarkable application of Isai. xxvi. 10 as in *De Antichristo*, c. 63 (*ib.* p. 33.)

(4). But on the other hand the interpretation of the binding of the "strong man" (St. Matth. xii. 29), in this same extract, does not well agree with the use of that text in *Comm. in Dan.*, c. 18 (*ib.* p. 158.)

JOHN GWYNN.

July, 1888.

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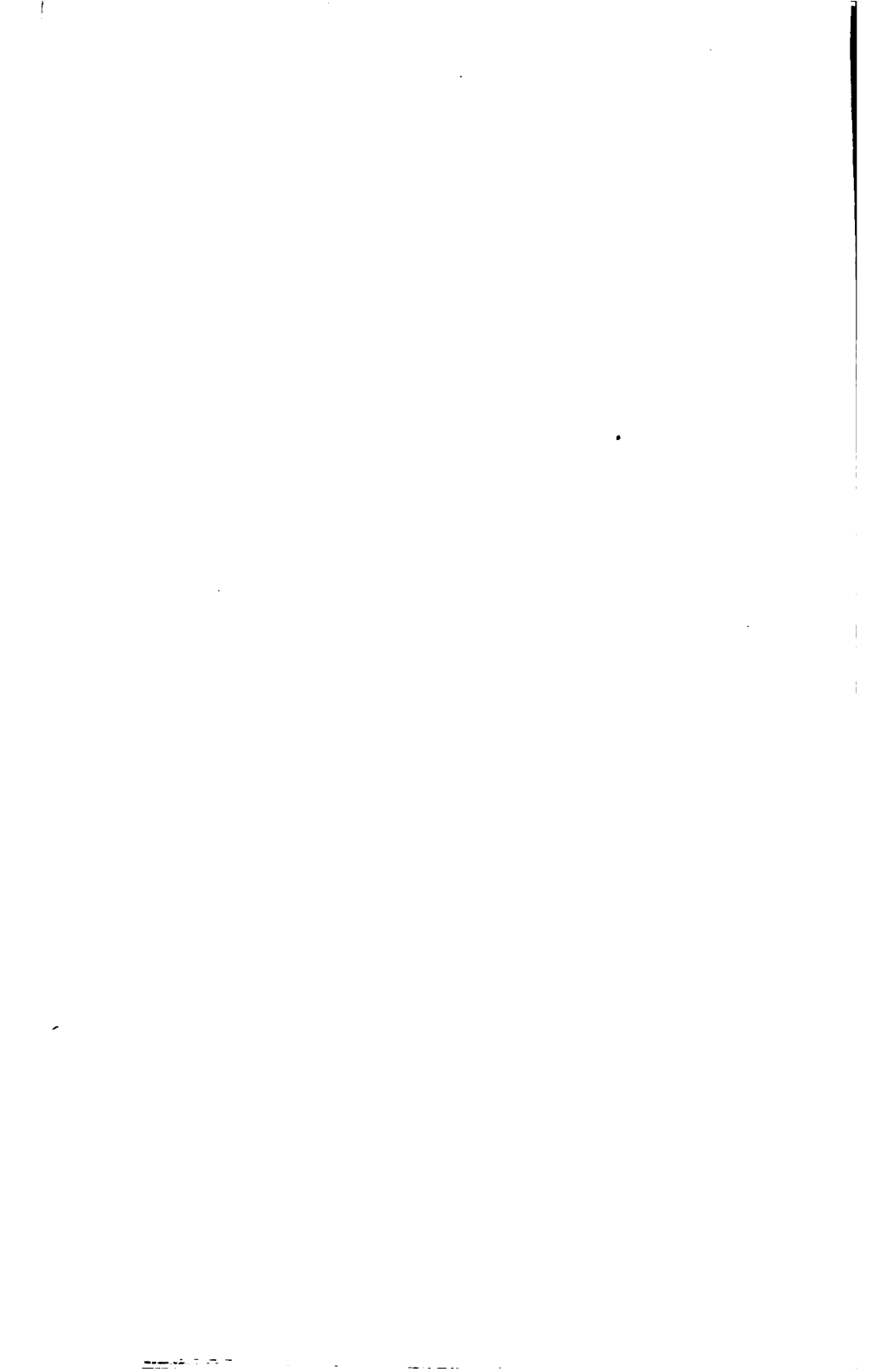


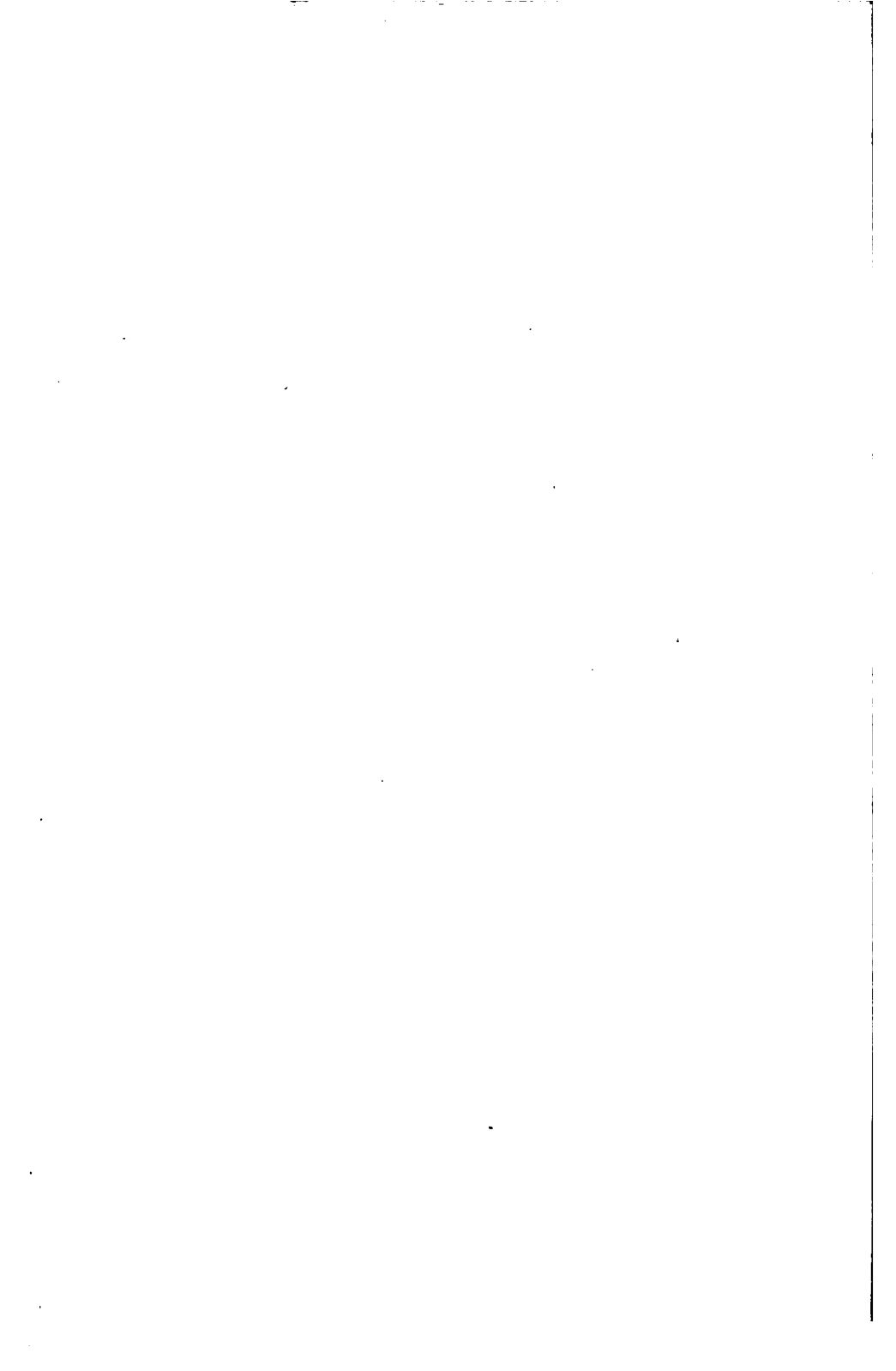
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